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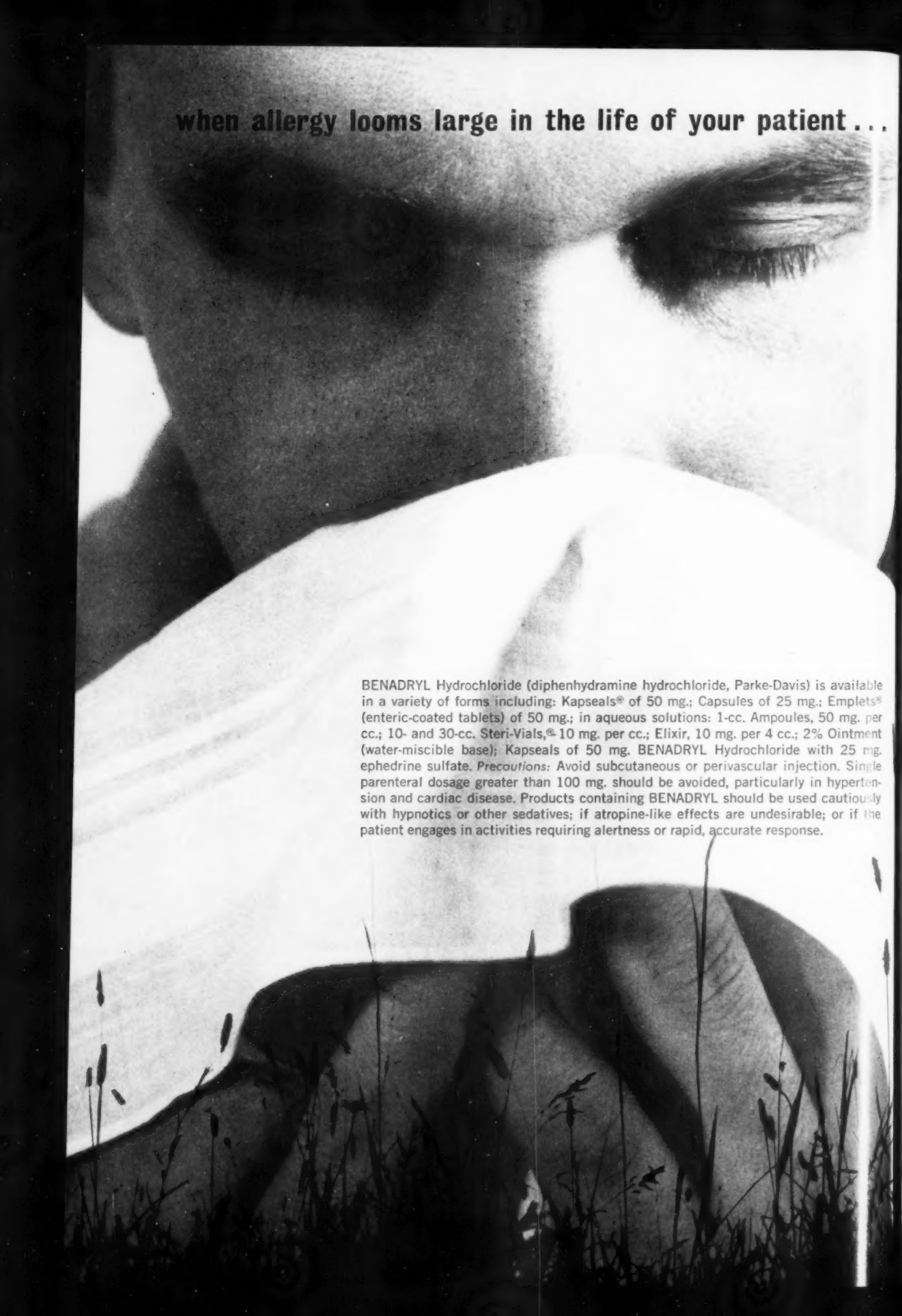

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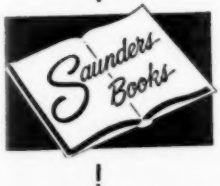

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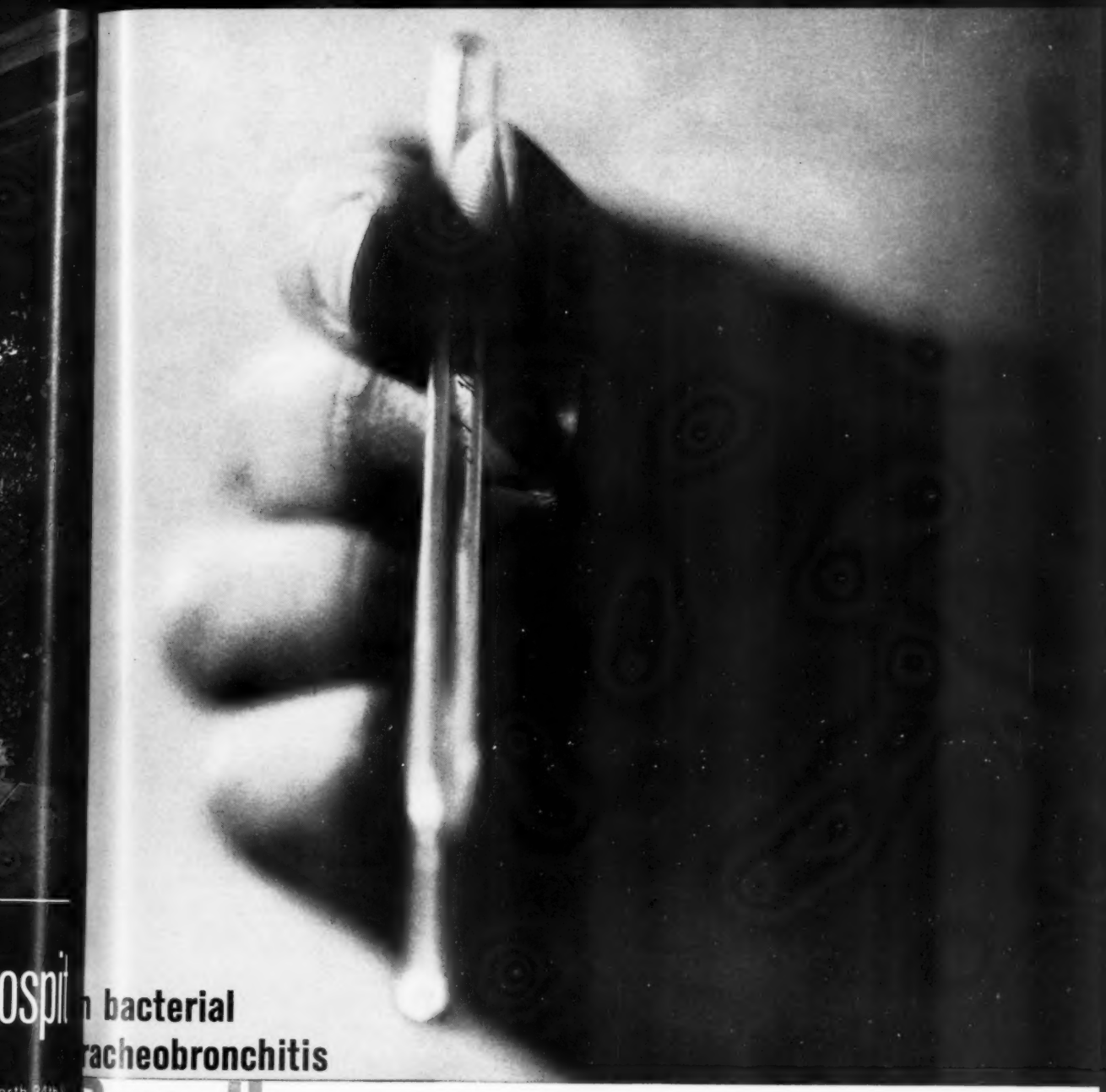

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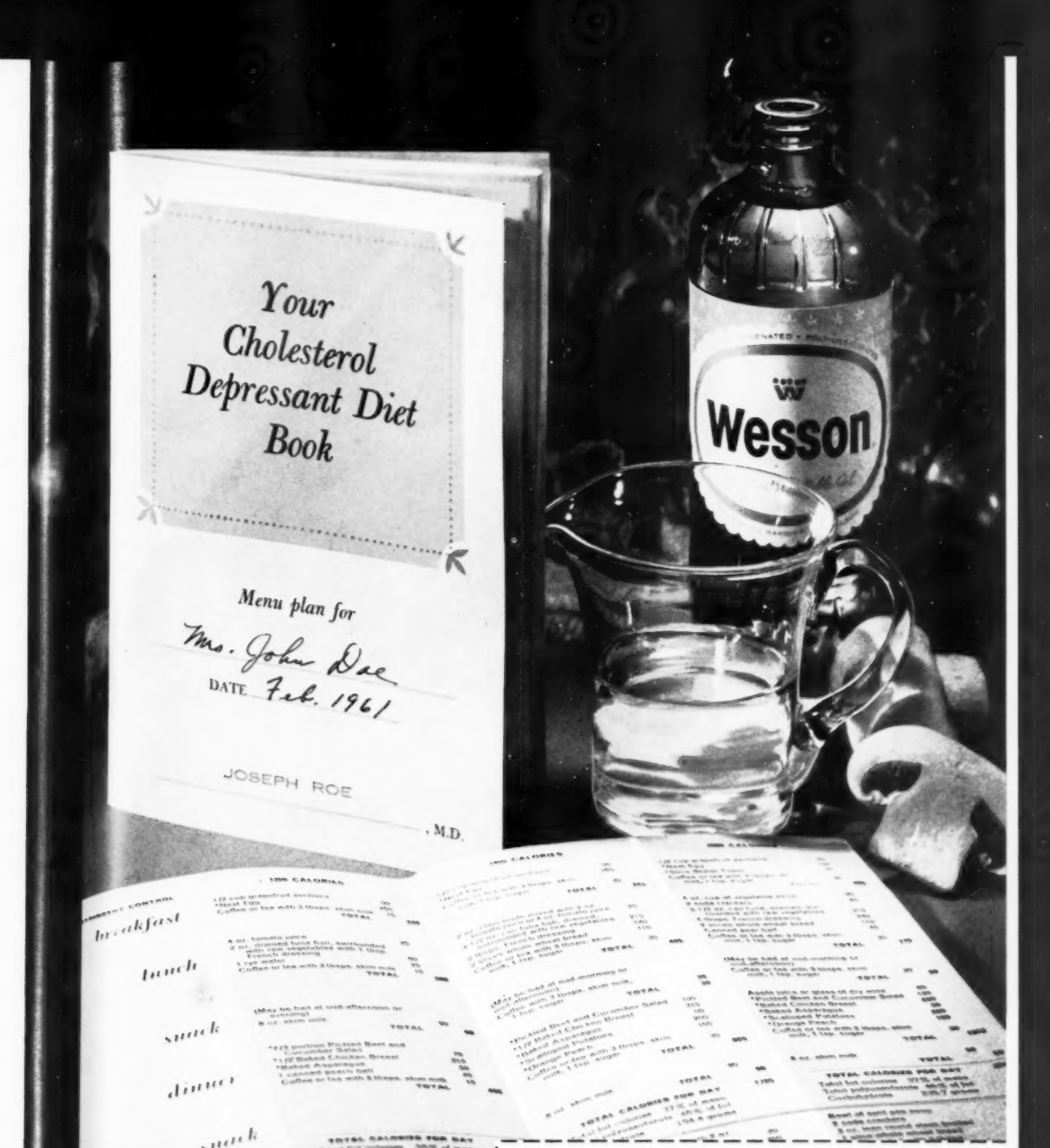

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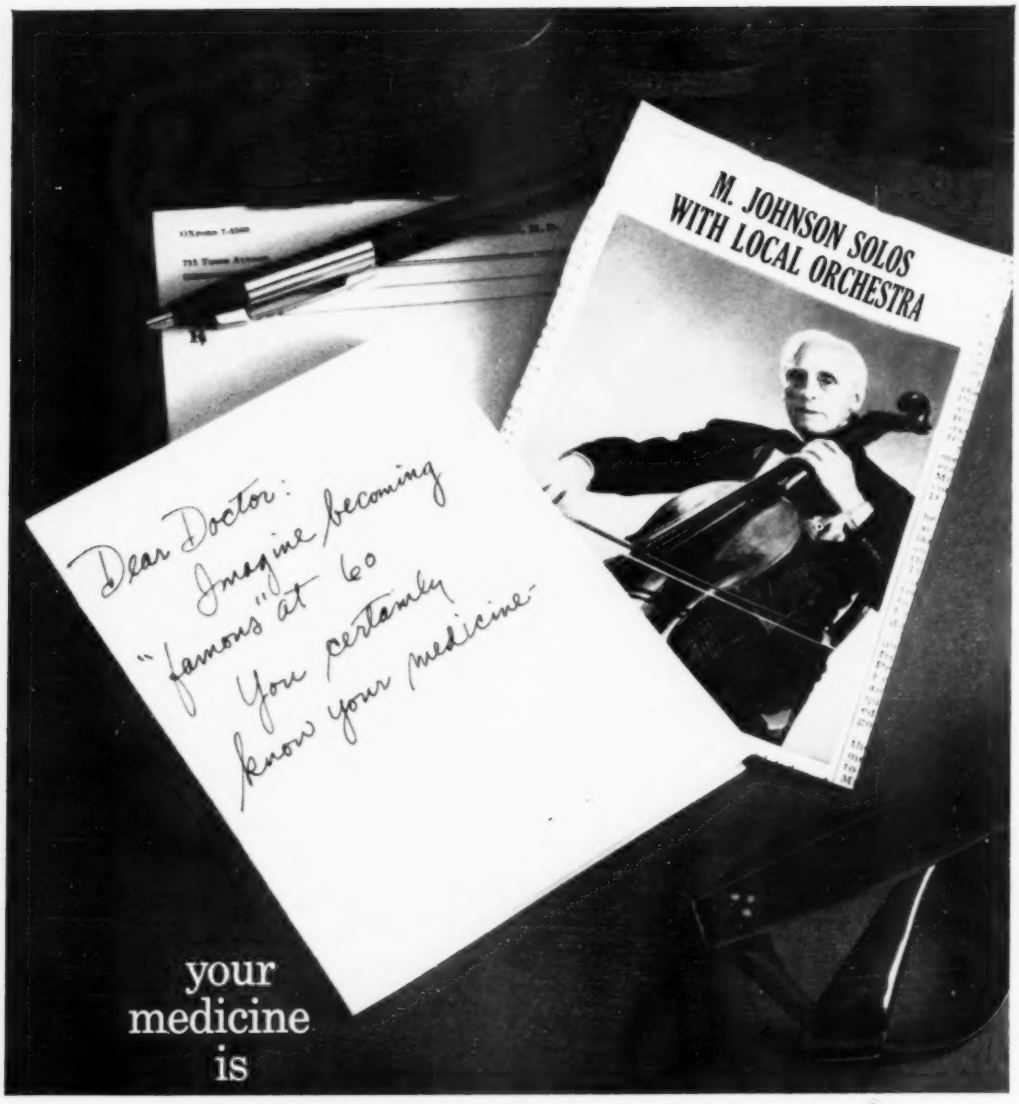

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Bibliography *(13 clinical studies, 858 patients):* **1.** Alexander, L. (35 patients): Chemotherapy of depression – Use of meprobamate combined with benactyzine (2-diethylaminoethyl benzilate) hydrochloride. J.A.M.A. 166:1019, March 1, 1958. **2.** Bateman, J. C. and Carlton, H. N. (50 patients): Meprobamate and benactyzine hydrochloride (Deprol) as adjunctive therapy for patients with advanced cancer. Antibiotic Med. & Clin. Therapy 6:648, Nov. 1959. **3.** Beerman, H. M. (44 patients): The treatment of depression with meprobamate and benactyzine hydrochloride. Western Med. 1:10, March 1960. **4.** Bell, J. L., Tauber, H., Santy, A. and Pulito, F. (77 patients): Treatment of depressive states in office practice. Dis. Nerv. System 20:263, June 1959. **5.** Breitner, C. (31 patients): On mental depressions. Dis. Nerv. System 20:142, (Section Two), May 1959. **6.** Gordon, P. E. (50 patients): Deprol in the treatment of depression. Dis. Nerv. System 21:215, April 1960. **7.** Landman, M. E. (50 patients): Clinical trial of a new antidepressive agent. J. M. Soc. New Jersey. In press, 1960. **8.** McClure, C. W., Papas, P. N., Speare, G. S., Palmer, E., Slattery, J. J., Konefal, S. H., Henken, B. S., Wood, C. A. and Ceresia, G. B. (128 patients): Treatment of depression – New technics and therapy. Am. Pract. & Digest Treat. 10:1525, Sept. 1959. **9.** Pennington, V. M. (135 patients): Meprobamate-benactyzine (Deprol) in the treatment of chronic brain syndrome, schizophrenia and senility. J. Am. Geriatrics Soc. 7:656, Aug. 1959. **10.** Rickels, K. and Ewing, J. H. (35 patients): Deprol in depressive conditions. Dis. Nerv. System 20:364, (Section One), Aug. 1959. **11.** Ruchwarger, A. (87 patients): Use of Deprol (meprobamate combined with benactyzine hydrochloride) in the office treatment of depression. M. Ann. District of Columbia 28:438, Aug. 1959. **12.** Settel, E. (52 patients): Treatment of depression in the elderly with a meprobamate-benactyzine hydrochloride combination. Antibiotic Med. & Clin. Therapy 7:28, Jan. 1960. **13.** Splitter, S. R. (84 patients): Treatment of the anxious patient in general practice. J. Clin. & Exper. Psychopath. In press, April-June 1960.

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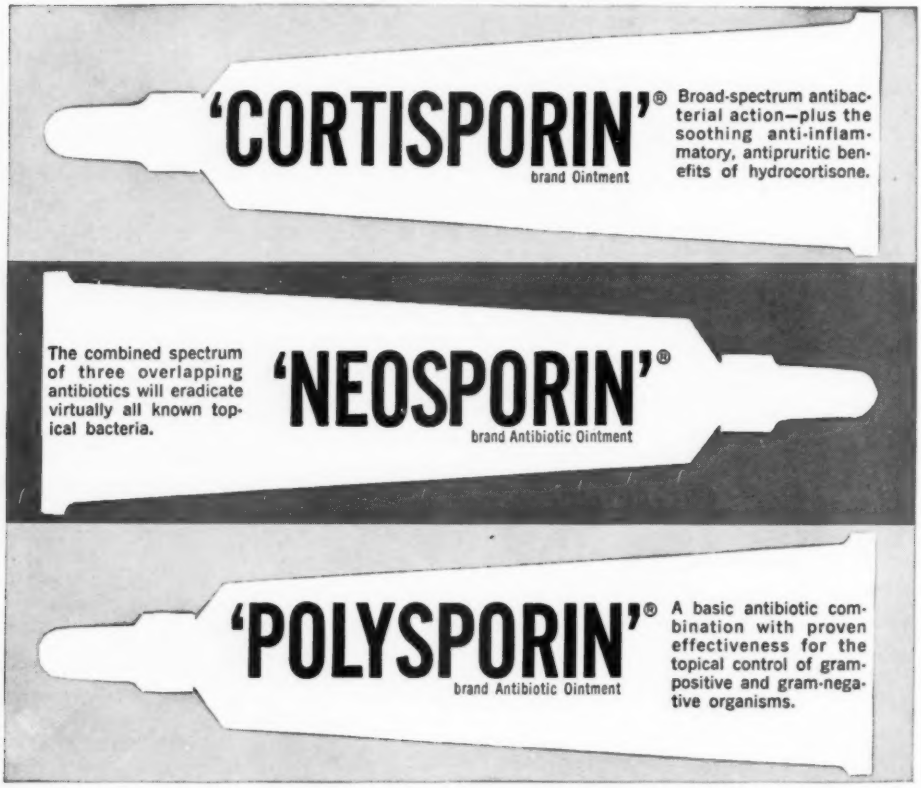
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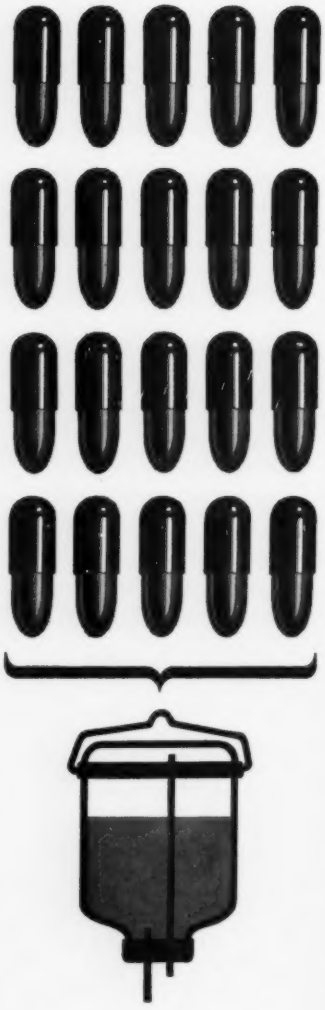

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Original Articles

Arizona Medicine

August, 1961 Vol. 18, No. 8

Modern Management of Endometriosis

J. G. Moore, M.D.

The incidence, pathology, pathogenesis, symptoms and clinical findings of the disease is divided into (a) symptomatic; (b) suppression of ovulation and suppression of menstruation by estrogens, progestins, or androgens; (c) conservative and "radical" surgery and (d) occasionally irradiation.

ENDOMETRIOSIS is an intriguing disease. Its symptomatology is varied and inconstant, bearing little relationship to the extent of the disease. Its pathogenesis can be explained quite plausibly in a given case, but the absence of the process in exactly clinically similar situations is baffling. The importance of endometriosis as a clinical entity is attested by its high incidence, by its disabling symptoms, by its relationship to infertility, by its close dependence on ovarian function, and the surgical difficulties that it presents. The not infrequent necessity of castrating the patient in the course of therapy is distressing.

Fortunately endometriosis is usually not a disabling disease. Years may pass without progression of the lesions. The condition is usually responsive to suppressive measures and most gratifyingly it regresses after the menopause. In order to best utilize the modern measures of suppressive therapy with ovarian conservation, it is necessary to fully understand the incidence, symptomology, and pathogenesis of endometriosis.

Presented at the Arizona Chapter of the American College of Surgeons' Fall Clinical Congress, Tucson, November 16, 1960.
From the Department of Obstetrics and Gynecology, UCLA Medical School, Los Angeles 24, California.

INCIDENCE

Endometriosis is usually diagnosed in the unmarried career woman in her mid-thirties. Occasionally she is married, but if so, she usually is in a respectable financial bracket and has not borne children. She is often tense and inclined to worry. These are your most substantial private patients. Various series indicate that 10 to 30 per cent of private patients coming to laparotomy will have endometriosis.

By contrast, the unworried, somewhat obese, indigent mother of many children will seldom develop endometriosis. On the indigent services only 1 to 2 per cent of pelvic laparotomies will uncover endometriosis.

Endometriosis usually becomes symptomatic in the thirties. However, it may occur from the

early twenties up to the menopause. Three years ago we had in our clinic a 17-year-old patient with an obstructive lesion involving the rectosigmoid segment of the colon. Most patients, however, are diagnosed in the fourth decade of life.

PATHOLOGY

Endometriosis in the strict sense is endometriosis externa as opposed to endometriosis interna which is more properly designated adenomyosis. Adenomyosis presents an entirely different picture when viewed histologically. It represents a process in which the basal layers of endometrium extend deep into the myometrium. These patients may have a somewhat enlarged, boggy uterus and are frequently troubled with menorrhagia and dysmenorrhea. Most often adenomyosis is asymptomatic.

The process of endometriosis results in growing foci of endometrial tissue found largely on the ovaries and peritoneal surfaces of the pelvis. These ectopic sites of endometrial growth can, but rarely do, occur in many other areas of the body as will be seen below.

PATHOGENESIS

Few processes of medicine have intrigued gynecologists quite so much as the pathogenesis of endometriosis. Early it was felt that endometriosis represented the growth of cell rests coming from the Mullerian duct (W. W. Russell) or from the Wolffian duct (Von Recklinghausen). This view is held unlikely at present.

In 1921 Sampson popularized the theory of implantation of endometrium transplanted to the abdominal cavity by the process of retrograde flow along the uterine tubes. Since desquamated endometrium has been shown to be viable in tissue culture and in the abdominal wall, since the tubes are usually open in endometriosis and since Scott and his group have demonstrated the devolpment of endometriosis in monkeys during intraperitoneal menstrual fistulae, this theory has gained much acceptance.

Robert Meyer proposed the process of metaplasia of the coelamic epithelium to endometriosis. Attempts have been made to reproduce this mechanism with no success. It is true, however, that failure to reproduce it experimentally does not eliminate it as a possibility.

Halban suggested dissemination of endometrial fragments by way of the lymphatics. In recent years Javert has demonstrated ectopic endometrium in pelvic lymph nodes. It has also been observed in a greater degree, experimentally in monkeys.

The present evidence would favor the implentation of viable endometrial fragments to the peritoneum by retrograde tubal passage with additional vascular (largely lymphatic) spread to various distant areas. One can logically accept the vascular spread of endometrium by transpulmonic spread or by vascular spread along vertebral veins. The latter would explain endometriosis in such rare and unlikely sites as the thigh and the forearm.

SYMPTOMS

The symptoms of endometriosis are extremely variable and their presence, absence or severity bears a somewhat casual relationship to the extent of the process. Table I indicates these symptoms in order of clinical importance.

TABLE I

Secondary Dysmenorrhea
Menstrual Aberration
Premenstrual Tension
Dyspareunia
Pain at Defecation
Associated Infertility
Premenstrual Mastalgia
Backache

Very often the patient with the minimal extent of the endometriosis has the most disabling symptoms. It is difficult to eliminate the situational or psychosomatic aspects of such a patient's symptoms. In other instances an extremely extensive case of endometriosis may be uncovered at an operation undertaken for large asymptomatic masses. Dyspareunia and pain on defecation are related to the extremely tender nature of the endometriotic implants, especially in the cul de sac. Menstrual aberrations may vary from menorrhagia to ammenorrhea, but in most cases there is prolonged spotting of dark blood between periods. This blood presumably is escaping slowly from the abdomen through the tubes and uterus to the vagina.

Dysmenorrhea is largely of the type which follows ovulation and is associated with distressing menstrual molimina. The latter are disconcerting and frequently associated with endometrio-

sis. They take the form of premenstrual tension, weight gain (fluid retention), headaches, and nastalgia. The dysmenorrhea along with the associated molimina are of the secondary type coming on in the twenties or thirties.

The association of endometriosis with infertility presents an uncertain correlation. It is true that the nulliparous woman has more endometriosis. However, she is not necessarily infertile *because* of the endometriosis. It is just as likely that she has endometriosis with nulliparity representing one of the associated causative factors. Women with endometriosis do ovulate and usually have open tubes and they not infrequently become pregnant.

FINDINGS

The characteristic finding of early endometriosis is tender scarring in the cul de sac and along the uterosacral ligaments. Usually, there is restricted mobility of the uterus and it may be the site of a fixed retroversion. Many used to feel that a retroverted uterus was conducive to the development of endometriosis and this may well be true. It does not seem so obvious today and the retroverted uterus is less worrisome to us now. In the presence of endometriosis the retroversion is more likely to become fixed in the cul de sac and very tender. In such cases pelvic congestion and dyspareunia are more of a problem. Occasionally endometrial implants are found on the cervix and in the vagina. They usually occur as small blue cysts but often present as non-specific ulcerative lesions.

At operation endometriosis may vary from large well encapsulated cysts, or diffusely distributed small chocolate cysts, to small peritoneal implants on the pelvic peritoneal surfaces. The small implants have the characteristic black puckered appearance of powder burns. As the endometriotic cysts are incised the syrupy fluid that is released represents hemolyzed and inspissated blood, whether the fluid is "chocolate" brown or "crankcase oil" black.

MANAGEMENT

The management of the patient varies greatly because of the wide limits of the process and the varying symptomatology. Such clinical features as vaginal bleeding or infertility necessarily modifies the treatment. Table II outlines the usual sequence of therapeutic measures employed in endometriosis.

TABLE II
Management of Endometriosis

1. Symptomatic
2. Hormonal Measures
   - Pregnancy
   - Estrogens
   - Progestins
   - Andogens
3. Operative Measures
   - Cauterize Implants
   - Resect Cysts
   - Uterine Suspension
   - Presacral Neurectomy
   - Uterosacral Section
   - Hysterectomy
   - Hysterectomy and Oophorectomy
4. Irradiation

SYMPTOMATIC MANAGEMENT

The great majority of women with minimal degrees of endometriosis can be managed expectantly. In these cases the diagnosis is usually presumed from the characteristic symptoms and findings. Naturally if the patient has definite pelvic masses the diagnosis must be documented by exploration. Therapy in these patients is discussed below. However, in the absence of sizable pelvic masses and with the diagnosis presumed from the symptomatology and the finding of tender scars in the cul de sac, a period of observation and symptomatic management is perfectly logical.

A thorough explanation of the presumptive diagnosis, assurance, and mild analgesia will carry most women with endometriosis. If they are nulliparous and young, they are encouraged to get on with their family (i.e. have children). In the group in their late thirties the explanation of the incidence and assurance of the unlikelihood of the process extending is emphasized.

Very often the dysmenorrhea and premenstrual tension is sufficiently severe to require treatment. Chlorothiazide 500 mg. daily for 5 or 10 days prior to the expected period is of considerable help in avoiding the fluid retention associated with premenstrual tension. A mood elevator such as the various dextroamphetamine and barbiturate mixtures is particularly effective for this condition. Tranquilizers may be of value in some cases.

SUPPRESSION OF OVULATION

When the dysmenorrhea does not respond to mild analgesics, it may be necessary to suppress

ovulation. Anovulatory menstruation is surprisinly free of menstrual cramps. Ovulation may be suppressed by estrogens, progestins, or androgens. Usually 1 mg. stilbestrol each day for 21 days and then skipping seven days of treatment is sufficient to provide an anovulatory cycle (i.e. suppress ovulation). Withdrawal bleeding comparable to menstruation should occur during the week without medication. On subsequent cycles it may be necessary to increase the daily dose up to 3 mg. stilbestrol in order to keep ovulation from breaking through. It should always be given on a cyclic basis with three weeks of medication and one week of withdrawal in order to mimic the menstrual cycle and to allow a predictable period of withdrawal bleeding each month. This method of providing symptom-free periods naturally would seem to allow withdrawal bleeding from the endometriotic sites as well as from the normal endometrium and is subject to objection on this ground. Obviously suppressing ovulation is not logical for infertility patients with endometriosis. It has the more urgent objection in many cases of not thoroughly relieving the symptoms.

If suppressing ovulation by cyclic stilbestrol proves to be unsatisfactory, 19-norethynodrel (Enovid) or norethindrone (Norlutin) in 10 mg. doses in the same cyclic fashion (21/7 days) frequently is effective, but these progestins are much more expensive.

SUPPRESSION OF MENSTRUATION

In some patients it may be indicated to suppress menstruation completely and presumably suppress growth of the endometriotic implants. These are the patients in the following categories:

1. Patients with severe symptoms but findings which are insufficient to warrant laparotomy for endometriosis.
2. Patients with proven diagnosis with progression of the process.
3. Poor surgical risks.

Menstruation is suppressed by giving increasing doses of 19-norethynodrel or norethindrone. Usually the former (Enovid) is given orally according to the regimen of 10 mg. daily for 10 days, 20 mg. daily for the next 10 days, 30 mg. daily for the next 10 weeks, and 40 mg. daily thereafter until the 24th week of therapy. This highly potent progestin brings about a marked decidual effect with thrombosis and necrosis of the endometrium.

Though this pseudopregnancy state is maintained for only six months, there is a persistence of the beneficial effects for varying periods of time thereafter. The reported series have varied in their enthusiasm, but lasting beneficial results up to as high as 85 per cent are claimed. No one would disagree that a normal pregnancy would be more appropriate therapy under the proper circumstances.

The main disconcerting side-effect of therapy with the potent progestins is nausea. Occasionally it is quite upsetting early in the pseudopregnancy (just as in true pregnancy), but it becomes quite tolerable later on. Break-through bleeding often occurs from 20 to 120 days, but it is seldom a problem. Occasionally, following the withdrawal of medication, the first period will be associated with the passage of an endometrial cast and the process may be accompanied by cramps.

Karneky proposed the suppression of menses (and endometrial bleeding) by the administration of increasing doses of estrogens. Menstruation is therewith delayed for three to nine months as the original 1 mg. dose of stilbestrol is increased up to 100 mg. orally per day as is necessary to delay menstruation. The use of this medication though less expensive is less logical since instead of bringing about endometrial necrosis, endometrial hyperplasia is actually produced. Break-through bleeding is quite common, occasionally with serious hemorrhage.

Androgens have a very beneficial symptomatic and suppressive effect on endometriosis even though menstruation is not suppressed. Usually 10 mg. per day of methyltestosterone orally is the desired dose, but the amount must be titrated in each patient. Occasionally side effects of hirsutism and acne or increased libido prevent its continued use. In other cases it has been used effectively for years. It has most value in the patients with severe symptomatology and minimal physical findings.

The most attractive feature of the medical management of endometriosis is that it allows a

substantial relief from symptoms and may halt the progression of the process while ovarian function and pregnancy potential is preserved. It has its most valuable place in treatment with recurrence of symptoms or progress of the endometriosis after conservative surgery.

SURGICAL MANAGEMENT

It seems only logical that abdominal exploration should be done to confirm the presumptive diagnosis when pelvic masses are present. Ovarian cancer must be ruled out and early surgery for endometriosis of restricted extent is entirely logical. Surgical measures which remove the endometriosis and preserve ovarian function is extremely important in young women and is entirely successful in a large percentage of the cases. Surgery also puts the subsequent medical-suppression management of endometriosis on a sound basis.

Occasionally the young woman with restricted physical findings but with maximal and disabling symptoms is best served by surgery. A dilatation and curettage should be done initially to rule out local causes of metrorrhagia and dysmenorrhea. On exploration, resection of endometriotic cysts from the ovary, cauterization or resection of peritoneal implants, uterine suspension and presacral neurectomy (with severe dysmenorrhea) can be carried out with considerable benefit. Very often the patient with severe intractable dysmenorrhea will prove to have endometriosis as a surprise finding.

If the patient has sizable (7-12 cm.) pelvic masses, exploration is mandatory to rule out an ovarian neoplasm. If the woman is less than 35, every effort should be made to resect the endometriosis and preserve ovarian function. Some feel that hysterectomy will do much to suppress endometriosis when the ovaries are left after the resection of endometriotic cysts. If the woman is over 35 or 40 consideration should be given to a complete operation with removal of the ovaries, tubes, and uterus. If portions of endometriosis cannot be removed in these women and fragments are left behind, estrogens for the resulting menopausal symptoms should be prescribed with caution.

A point of considerable importance to the surgeon involves the young woman yet to bear children. Very extensive dissection and wide ovarian resections can be carried out and pregnancies may and do result from a small shell of ovary.

LATER THERAPY

If the endometriosis progresses following conservative surgery, medical suppressive therapy or even reoperation is worthwhile in an effort to preserve ovarian activity and childbearing function. If the woman is past 35, the second operation should probably be complete. In the woman past 45, whose endometriosis progresses following surgery, irradiation castration would appear to be in order. Either 1000 roentgens of external lower abdominal irradiation or 1500 milligram hours of intracavitary uterine radium will suffice. It should be emphasized that relatively few women will fall into this group.

SUMMARY OF MANAGEMENT

1. Most patients with minimal or restricted degrees of endometriosis will respond to symptomatic treatment.

2. Suppression of ovulation by estrogens or the high-potency progestins is effective in controlling dysmenorrhea when necessary. Androgens also are often effective in controlling the symptoms of endometriosis.

3. Patients with moderately extensive endometriosis should be subjected to exploration for purposes of diagnosis and conservative, definitive surgery.

4. If endometriosis progresses following surgery or if symptomatic treatment is unsuccessful, suppression therapy — pseudopregnancy with the high potency progestins — is often effective and may provide lasting benefits.

5. If endometriosis recurs and progresses in spite of medical suppression therapy after the age of 35 years, complete surgery with hysterectomy and ovarian ablation may be indicated. In the rare patient in whom the process recurs and progresses after the age of 45, irradiation castration is in order.

6. Endometriosis is not a problem after the menopause unless stimulated by exogenous estrogens.

The Safety of Milk Supplies

Hugh H. Smith, M.D., M.P.H.

"OF ALL THE foods available to man probably none is of such great importance as milk. Milk, if clean and fresh, has been described as the most nearly perfect food. Its very excellence as a food, and its extensive use, especially for children, make it necessary for sanitarians to exhibit an unusual interest in its quality – partly because of its value in human nutrition, but equally because of its intimate relationship to the public health. For among all the vehicles of disease there is perhaps none more potentially dangerous to man than infected milk. This fact, based upon the scientific discoveries in bacteriology during the past 40 years, is one of the outstanding sanitary conclusions established during this period. Nevertheless, even today, this important relationship between dirty and contaminated milk and possible disease is not recognized as universally as should be the case. Perhaps this is in part because milk has always been one of the most trusted of human foods. Of high repute for easy digestibility; believed to represent in perfection a natural dietary; in general, popular and cheap – milk has always deservedly held a high place in the public esteem. On the other hand, as informed physicians and sanitarians will testify, the use of raw milk has been associated altogether too frequently with diseases of the epidemic type; and in spite of its excellent reputation as a cheap and valuable food, increasing attention has been directed toward the problem of making milk a safe food for human consumption."(1)

The first milk epidemic of which there is any record was reported by Dr. M. W. Taylor in the year 1857. This was a typhoid fever epidemic in the city of Penrith, England. Of course, milk had often been the cause of epidemics before that time, but no definite knowledge of the relationship of milk to human disease was easy to demonstrate until the early bacteriologists had discovered the causes of such infections. In 1881, Dr. E. Hart, of England, published a large list of some 50 milk epidemics in which were included typhoid fever, scarlet fever and diphtheria.(2)

The invention of Babcock, in 1890, of a simple and accurate method for determining the percentage of butter fat in milk resulted in a marked up-grading of the standards of the dairy industry. Thus buyers were enabled to avoid the purchase of watered milk. Another great epoch began in 1892 when the Newark (N.J.) Medical Milk Commission was established. This group led the movement toward "certified" milk, from which grew the principles of dairy sanitation, bacterial testing and bacterial standards that have had ever since that time a most profound and far-reaching influence on every branch of the milk industry.(2)

Between 1892 and 1906, 27 medical milk commissions were organized in the largest cities of the USA, and in 1907 a National Association of Milk Commissions adopted uniform standards for dairy certification. During this same period commercial pasteurization of milk by the flash method began to be used to a small extent.(3)

The work of Rosenau, in 1906, was important for the establishment of the thermal death points of pathogenic bacteria and on the temperatures necessary for the proper pasteurization of milk. This led to the development of suitable types of apparatus for large scale pasteurization of milk by the holding method, i.e., 143° F. for 30 minutes.

In 1908, the city of Chicago adopted the first ordinance requiring the pasteurization of all milk excepting that of the very highest sanitary quality. Since that time there has been a steadily growing conviction throughout the United States that the pasteurization of milk is a necessary

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measure for the protection of the health of the public.

As the populations of cities began to increase, the milk-producing areas have tended to recede from the centers of population. This has led to a greater degree of bulking the milk at the source of supply, the indifferent milk often being mixed with the good. It can be said in truth that all large bulks of raw milk are potentially dangerous to the consumer. In the face of such situations there is now no doubt that pasteurization of milk has become a prime social necessity. Without pasteurization it would be difficult to provide large urban populations with sweet milk at economic prices.

DISEASES SPREAD BY MILK

The diseases conveyed by milk are: tuberculosis, typhoid and para-typhoid fevers, gastroenteritis or food poisoning, diphtheria, streptococcal infections (scarlet fever and septic sore throat), brucellosis, foot and mouth disease, Q fever and milk sickness; also some of the summer diarrheas of children. Poliomyelitis may rarely be milk borne.

Milk becomes infected from human sources, usually on the farm, sometimes at the milk plant, occasionally in transportation, and rarely in the household of the consumer. Sometimes the milk becomes infected as a result of disease of the animal, as in the case of bovine tuberculosis, brucellosis, Q fever and others. Furthermore, cows' udders may become infected with human pathogens, particularly the types of streptococci responsible for sore throats and scarlet fever.

Milk-borne outbreaks of disease are nearly always due to raw milk, often milk of good quality, even certified milk. A few outbreaks have been traced to milk labeled as pasteurized which either has not been pasteurized at all, was grossly under-pasteurized or was contaminated after pasteurization with raw milk or with pathogens from cases or carriers. There is no record of a milk-borne outbreak attributable to properly pasteurized milk.

Between the years 1907 and 1948, approximately 750 milk-borne outbreaks of typhoid fever, diphtheria and streptococcal infections were reported in the United States. These involved some 33,500 individuals. Surveys conducted in some states indicate that dozens of other milk-borne epidemics unreported to health departments probably occured during this period. It is gratifying to note that with the rapid extension of the program for sanitation of milk supplies throughout the country, the number of disease outbreaks attributable to milk has declined sharply beginning about the time of World War II.

Feemster reporting on milk-borne disease in Massachusetts for the period 1946-1950(5) states that during this time approximately 99 percent of all milk consumed in the state was pasteurized. No outbreaks of important milk-borne disease occurred in Massachusetts during that five-year period.

PASTEURIZATION

Pasteurization is advocated because milk is likely to convey the organisms responsible for a number of infections harmful to man. Pasteurization effectively prevents this hazard. It is the simplest, cheapest, least objectionable and most trustworthy method of rendering infected milk safe. Next to water purification, pasteurization is the most important single preventive measure in the field of sanitation. (4)

The pasteurization of milk supplies is not proposed as a substitute for, but as an adjunct to, sanitation and good dairy practice. Health department inspectors are essential to ensure for the public a clean,safe dairy product of high quality. The most direct way to measure the effectiveness of routine pasteurization plants is by making bacteriological, biochemical and chemical tests on surprise samples of the finished products as offered to the public for consumption. The discerning use of field and laboratory tests supplemented by sanitary inspections is most likely to result in effective control.

LEGISLATION FOR MILK CONTROL

In the United States, the authority for sanitary control of milk is vested in the states except where interstate commerce is involved. This authority is derived from the "police powers" of the states to protect the health and welfare of their citizens. In many states, by legislative act, authority for protection of public health, including sanitary control of milk, has been delegated to municipalities and other local jurisdictions. Experience has shown that local supervision is the

best method of exercising sanitary control over milk and milk products.

One of the first states to recognize the need for uniformity of regulations for the control of milk was Alabama. In 1923, that state requested the United States Public Health Service to cooperate with her State Health Department in the formulation of a state-wide milk program. As a result of the activities of these two cooperating agencies, a standard milk ordinance was elaborated. Since that time the ordinance has been changed and revised many times to keep pace with new developments and technological improvements in the handling and processing of milk; all revisions are acted upon by a board of consutlants, first appointed about 1932 and now known as the Public Health Service Sanitation Advisory Board. This Standard Milk Ordinance has done much to guide the thinking of milk sanitarians. However, the need for uniformity in milk control legislation is still apparent. Too many communities are attempting to regulate the purity of milk supplies with old and out-moded ordinances which fail to emphasize essentials or place undue stress upon requirements of little proved value.

At the present time the milk ordinance and code recommended by the USPHS serves as a basis for regulations in 36 states and has been voluntarily adopted by over 1900 countries and municipalities throughout the United States.(6)

The pasteurization of milk has had wide acceptance in this country and is directly responsible for the excellent control of milk-borne diseases. It is estimated by the USPHS that 90 percent of all the milk consumed by the urban population is heat treated. Although the figures for our rural population are not available, it is well known that pasteurized milk is sold in the rural areas in ever-increasing amounts. In spite of this progress, there is still an alarming amount of raw milk being consumed daily throughout the nation.

MILK IN ARIZONA

In the early days of this century outbreaks of milk-borne disease were common in Arizona. With the establishment of the State Laboratory in 1912, control over milk supplies was tightened, as health officers and sanitary inspectors started a program of sampling and testing. The first recorded outbreak of Malta Fever in the United States occured in Phoenix in 1922. A herd of milk goats was brought to the city for the purpose of selling goats' milk. Cases of an unknown fever kept occuring over a period of months until finally a definite diagnosis of undulant fever was made. The sale of goats' milk was then prohibited.(7)

In addition to the well known communicable threats that are prevalent among Arizona milk cattle, a new danger has recently been discovered, that of Q fever, caused by a rickettsial agent.(8) (9) In some of the herds tested for Q fever immunity, as high as 60 percent show a positive reaction indicating previous infection with the agent of Q fever. This serious type of infection may be transmitted to man by the consumption of infected raw milk.

In 1927, Arizona, with the cooperation of the United States Public Health Service, launched a program of milk control. As a result, seventeen cities and towns of the state adopted the USPHS Standard Milk Ordinance and Code.

In 1956, the legislature made the provisions of the USPHS Milk Ordinance and Code applicable for all of Arizona. Unfortunately, at the same time another article in the law expressly declared that the sale of raw milk is legal in this state. Although the sale of unpasteurized milk in Arizona is known to be small, especially in the urban areas, the potential hazard to the public health still exists and ought to be eliminated by legislative action.

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What to Expect From Public Health in the 60's

Clarence G. Salsbury, M.D.

In this essay the Commissioner briefly reviews the history of Public Health efforts and in particular their influence in the United States and Great Britain. The author quotes C. E. A. Winslow, the father of the birthright concept of personal health, and then at some length describes the projected domains of Public Health as promulgated by Dr. John J. Hanlon, Professor of Preventive Medicine, Temple University. Some of our critical readers may question the need for governmental excursions into one or another of these domains and for reasons quite apart from the hoary plaint about "invasion of private practice". In the fields of chronic disease, and particularly those of genetic origin, the question will arise as to the advisability of spending public monies for the detection of cases of inborn metabolic error, the only cure for which, in behalf of Public Health, is the sterilization of the individual who bears the gene of defection. Are we in the Americas culturally and philosophically prepared to undertake such a "cure"?

ABOVE THE Hall of Records in Washington, D. C. appears this legend "The past is but prologue."

Perhaps before we predict the course of Public Health in the 60's it would be well for us to look briefly at the past and present trends in community health care.

In doing this we bring into better perspective the problems that have been met and conquered in the past. Then, too, looking at the recent important advances in Public Health practice gives us courage to face the new challenges of tomorrow.

Measures for the preservation of health and the prevention of disease are almost as old as civilization itself.

Thousands of years before Christ, the Cretans and others had advanced to the point where they constructed drainage systems, water closets and water flushing systems. The Egyptians 1,000 B.C. were described as the healthiest of all civilized nations. They too had a keen sense of personal cleanliness and various community projects for protection of their water supply as well as provision for sewage disposal.

The Grecian civilization was noted for its emphasis on personal cleanliness, exercise and dietetics, but paid scant attention to environmental sanitation.

The Roman Empire was noted for its engineering and administrative achievements. There were laws requiring the registration of citizens and slaves, prediodic census taking, establishment of a building code, supervision of weights and measures, bars and taverns and houses of prostitution. Extensive public sanitation pro-

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grams were put in operation as is evidenced by the fact that a number of the aqueducts and subsurface drains of that period are still in use today. Paving and street cleaning and garbage disposal were also innovations of this period.

With the advent of the Christian era, strong reaction developed against anything reminiscent of the then decadent Roman Empire. The attitude of the early Christians was that the Romans and Grecians had paid too much heed to the body and too little to the spiritual. This reaction was so intense that there was even opposition toward sanitation and personal hygiene.

People rarely bathed. It has been said that the use of perfume came into its heyday at this time since it was used instead of bathing. Sanitation deteriorated to the point where it was almost non-existent.

Such neglect naturally resulted in the great pandemics of the dark ages. It was only natural that smallpox, bubonic plague, diphtheria, leprosy, venereal disease and tuberculosis literally sent many millions of victims of their deaths.

Following this long period of death and destruction there began to develop slowly but surely an awakening of the need for community and state action to halt the gradual but sure liquidation of the so-called civilized people of that era.

Legally, Public Health went unrecognized even in England until 1837 when the first sanitary legislation was enacted establishing a Vaccination Board and appropriating 2,000 pounds to implement the program. This act was followed rapidly by others and it was not long until, as mentioned in Dorothy George's report, " . . . pride was based on real achievements, which had an undoubted effect on the health of the town, and in which London was a pioneer among large cities. The foot pavements, the lamps, the water supply, the fire plugs, the new sewers, defective enough by modern standards, were admired by all . . . The intelligent foreigner cannot fail to take notice of these useful particulars which are almost peculiar to London."

It was only natural that the new gospel of sanitation and hygiene should spread to Colonial America. Dr. Henry I. Bowditch in an address before the International Congress in Philadelphia in 1876 said, "But by far the greatest influence has been exerted on us in America by England who by her unbounded pecuniary sacritices and steady improvement in her legislation and her able writers has far outstripped any country in the world in the direction of state preventive medicine . . . The consumate skill in the discovery, removal and prevention of whatever may be prejudicial to the public health, shown under the admirable direction of Mr. Simon, late medical officer of England's Privy Council, by his corps of trained inspectors is wholly unequalled at the present day, and unprecedented I suspect in all past time in any country on the globe."

Although Louisiana set up a board or commission in 1855 to deal with quarantine matters in the port of New Orleans, the first Board of Health in the United States was established in Massachusetts in 1869, just 91 years ago. Thus, while there were sporadic attempts in various communities to set up measures for control of emergencies, we see that organized Public Health as we think of it today is less than 100 years old.

The first full-time county health departments were established 50 years ago.

So today within the life span of many of us, we have witnessed, if not the birth, certainly the early development and growing pains of nationwide public health programs.

What is Public Health today and what are its functions? Perhaps we can do no better than accept Winslow's definition which follows:

PUBLIC HEALTH
is
the science and art
Of

1. Preventing disease
2. Prolonging life
3. Promoting health and efficiency

Through

Organized Community effort

For

1. Sanitation of the environment
2. Control of communicable infections
3. The education of the individual in personal hygiene
4. The organization of nursing and medical services for the early diagnosis and preventive treatment of disease and
5. The development of the social machinery to insure everyone a standard of living adequate for the maintenance of health

So organizing these benefits as to enable every citizen to realize his birthright of health and longevity.

Another definition of Public Health is that given by the American Medical Association which says "it is the art and science of maintaining, protecting and improving the health of the people through organized community effort. It includes the arrangements whereby the community provides medical services for special groups of persons and is concerned with the prevention or control of disease with persons requiring hospitalization to protect the community, and with the medically indigent."

As pointed out by Hanlon, "In summary therefore there is evidence from the definitions themselves a gradual extension of the borders of public health. In conformity with the advances of medical and scientific knowledge and keeping pace with social and political progress, public health work has expanded from its humble concern with gross environmental sanitation to add in sequence sanitary engineering, preventive physical medical science, social science, preventive medical mental science, and more recently the positive or promotive and social aspects of personal medicine."

Again quoting from Hanlon on the scope of Public Health, he says, "What then are the justifiable fields of activity in public health? In view of the foregoing definition they may be considered to fall potentially into four categories:

1. Those fields where activity must be on a community basis such as the supervision of the food, water and milk supplies of a community; insect control; prevention of atmospheric and stream pollution.

2. Those fields dealing with preventable illnesses, disabilities or premature deaths:

   a. Communicable disease including infestations
   b. Dietary deficiences
   c. Effects of drugs and narcotics habitually used
   d. Allergic manifestations and their community sources
   e. Certain mental personality and behavior disorders
   f. Occupational health
   g. Cancer (primarily avoidance of progression; prevention to some degree)
   h. Cardiovascular diseases
   i. Conditions associated with the risks of maternity, growth, and development
   j. Certain hereditary conditions
   k. Home, community and industrial accidents
   l. Rehabilitations of victims of accident and disease
   m. Dental caries

3. Those fields of medicine which need organized official leadership.

4. Research — no health department can ignore scientific investigation and evaluation and remain progressive.

Surely with such an outline of the responsibilities of public health as indicated above it should be evident that there needs to be the widest dissemination of information to inform the public of the aims and objectives of local, state and Federal public health programs so that they may cooperate fully in making the best use of the services that are provided for their health protection.

Of equal or perhaps of even greater importance is a better understanding and closer cooperation between the private physician and public health.

Through the years I have been engaged in public health I have been aware at times of a concern on the part of some private practitioners that our State health program might be invading the domain of private medicine.

Except in the treatment of tuberculosis we carry on no curative program.

In our detection programs we know we have uncovered many new cases of syphilis, tuberculosis, diabetes and glaucoma. In every instance these suspected cases are referred to their private physician or to a county clinic for final diagnosis and treatment. We believe such efforts are the best type of health education, and that far from invading the private physician's practice it actually supplies him with many new patients, a percentage of which, if they had not been discovered, would have become permanent invalids, and in many cases no doubt an extra burden on the taxpayer.

In Arizona we have been most fortunate in having strong support from our State Medical and Dental Associations, as well as a number of influential voluntary agencies.

If we are to attain our greatest potential in the 60's the bond between private medicine and public health must be even closer than in the past because neither can function at its best without the other. Just as concepts of public health have changed so radically in the last five or six decades, so may we expect even newer and greater challenges for us in the next decade. To mention only a few of the problems knocking at our door today we might note:

1. Care of the rapidly increasing aged population
2. Care of chronic disease
3. The increasing toll from traffic accidents
4. Radiation and fall out
5. Diseases of genetic origin
6. Air conditioning and forced ventilation systems have changed our environment at home, in the office and even in our cars
7. Jet travel and space travel will also bring new problems
8. New construction methods will involve constant revisions of our ideas about sanitary facilities in these structures.
9. The increasing use of spray and dust pesticides is a constant menace to health unless done under proper conditions.

Dixon says "To adjust to these (new) changing community patterns as far as the official health agencies are concerned, requires a slight redefinition of the responsibility of the public health agency. We can still safely say that a local public health unit must still be concerned with the basic 6 or 7 services, but I believe the community will expect that its agency will take public leadership in meeting any health problem which the community desires to have solved by government. This means it will be necessary to strengthen the competence in public administration of health agencies and to modify professional health concepts by community opinion."

It will be interesting in 1970 to open the book and turn back the leaves to see how well we have met the challenges of the 60's.

ARIZONA STATE PSYCHOLOGICAL ASSOCIATION

The Board of Examiners of the Arizona State Psychological Association has recently published a directory of psychologists in private practice certified by the board. If you wish a copy please write to Dr. William F. Hall, secretary-treasurer, BE, ASPA, 125 E. Lincoln St., Phoenix, Ariz.

Que Esperar de Salubridad Publica en la Decada del 60

C. G. Salsbury, M.D.

SOBRE LA puerta de la sala de Estadísticas en Washington D. C. aparece esta frase: "El pasado no es mas que el prólogo."

Tal vez antes de predecir el curso de la salud pública en la década del 60, sería bueno revisarlo brevemente en lo que respecta a su pasado y presente, acerca del cuidado de la salud de la comunidad.

Haciendo ésto tenemos una mejor perspective de los problemas que se han encontrado y conquistado en el pasado. Además, viendo los recientes adelantos mas importantes en la práctica de la salud publica nos da valor para enfrentarnos a los desfíos del mañana.

Tan viejos como la civilización misma, son las medidas para la preservacion de la salud y prevencion de las enfermedades.

Miles de anos antes de Cristo, los Crétas y otros habían avanzado al punto de construir sistemas de drenaje, sanitarios y sistemas de agua corriente.

Los Egipcios 1,000 anos antes de Cristo fueron considerados como la nación civilizada más saludable, además tenían un agúdo sentido de la limpieza personal y varios proyectos comunales para la proteccion de su provisionamiento de agua, asi como para la depuración de las aguas negras.

La civilización griega era notoria por su limpieza personal, ejercicio y dieta, pero prestaban poca atención al ambiente sanitario. El imperio Romano fué notorio por su ingenieria y conquistas administrativas. Había leyes que exigían el registro de ciudadanos y esclavos, censos periódicos, establecieron el código de edificios. Supervisión de pesas y medidas, tabernas y cantinas, casas de prostitución.

Programas de lanzamiento se pusieron en práctica y la evidencia la tenemos en el hecho de que hoy día aun se encuentran en uso acueductos y drenajes superficiales de aquella época.

La limpieza de las calles, la pavimentación y el acarreo de basura, fueron inovación de ese período.

Con el advienimiento de era Cristiana, se desarrollo una fuerte reacción en contra cualquier reminisencia del entonces decadente Imperio Romano. La actitud de los primeros Cristianos era de que tanto los Griegos, como los Romanos, habían prestado mucha attención al cuerpo y muy poca a lo espiritual. Ésta reacción era tan intensa, que aun había oposición hacia la sanidad e higiene personal.

Las personas raramente se bañaban. Se ha dicho que el uso del perfune tuvo su mayor éxito en esta época.

La sanidad se deterioró al punto de que casi

Presentado en la junta de la Sociedad Medica de Los Estados Unidos y Mexico, Noviembre 10, 1960.

Anteriormente Comisionado del Departamento de Salud del Estado de Arizona.

ya no existía. Tal negligencia, naturalmente, dió como resultado el gran pandémico de la edad negra. Era lo mas natural que la viruela, la plaga bubónica, difteria, lepra, enfermedades venereas y la tuberculosis, literalmente mandara milliones de víctimas a la muerte.

Siguiendo este largo período de muerte y destrucción, comenzó a desarrollarse, despacio, pero con seguridad, el despertar hacia la necesidad de una comunidad, o estado, que tomara accion para impedir la gradual, pero segura liquidacion, de la tal gente civilizada de esa época. Legalmente la Salubridad Pública, estuvo sin reconocerse, aún en Inglaterra hasta el ano 1937, cuando la primera Legislación Sanitaria fué promulgada, estableciendo un Consejo de Vacunación, apropiandose de 2,000 libras para ejectutar el programa.

Este acto fué seguido rápidamente por otros y no tardo mucho tiempo, como se menciona en el reporte de Dorothy George's, "El orgullo fué basado en hazañas verdaderas, que tenían por resultado, en forma inequívoca, la salud del Pueblo, en el cual, Londres fué un pionero, entre las grandes ciudades. El pavimento para los peatones, las lámparas, el suministro de aguas, los hidrantes y los nuevos drenajes bastante defectuosos por las normas modernas, fueron admirados por todos. El extranjero inteligente, no puede menos que tomar nota de estos adelantos tan útiles, y que casi son peculiares de Londres.

Era natural que el evangelio de sanidad e higiene se extendiese a la América Colonial. El Dr. L. Bowditch al dirigirse ante el Congreso Internacional en Filadelfia en 1876 dijo:

La mayor influencia ha sido trasmitida a nosotros en América por Inglaterra, quien por su desenfrenado sacrificio pecuniario el progreso firme de su legislacion, asi como sus escritores capáces; le han valido, colocarse muy por encima, de cualquier nación en el mundo, en lo que respecta a la dirección, de la Medicina Preventiva del Estado.

La habilidad en el descubrimiento, eliminacion y prevención, de todo aquello que pudiera ser perjudicial para la Salud Pública, fué demostrado por la admirable direccion del Sr. Simon, ya finado Médico Oficial del Consejo Privaco de Inglaterra. Su cuerpo de inspectores entrenados no ha sido hasta la fecha, igualado, sin precedente en mi opinion, en ningun país del globo terreste; Aunque Luisiana estabeció una Comision en 1855 para manejar asuntos de cuarentena en el puerto de Nueva Orleans. El primer Consejo de Salud en Los Estados Unidos fué establecido en Massachusetts, en 1869 apenas hace 91 anos. Así, mientras había atentados esporádicos en varias comunidades para establecer medidas en el control de emergencias. Nosotros, vemos que la Salubridad Pública Organizada, vista ahora por nosotros, es menos de 100 años de antiguedad. Los primeros Departamentos de Salud del Condado a tiempo completo, fueron establecidos hace 50 años.

Hoy día, en el curso de nuestra vida, muchos de nosotros hemos sido testigos, si nó del Nacimiento, seguramente del temprano desarrollo y el crecimiento en toda la nación, de los programas de Salubridad Publica.

¿Qué es la salud púbuica, y cuáles son sus funciones¿ Tal vez tengamos que aceptar la definición de Winslow como sigue:

LA SALUD PUBLICA

es

La ciencia y el arte.

De

1. Prevencion de enferemedades.
2. prologacion de la vida.
3. Promover la salud y eficiencia.

Atraves de

1. Esfuerzo organizado de la comunidad.

Por

1. Sanamiento del medio.
2. Control de infeciones trasmisibles.
3. Educacion del individuo en higiene personal.
4. Organizacion de servicios medicos y enfermeria para el diagnostico temprano y tratamiento preventico de las enfermedades.
5. El desarrollo de la maquina social para asegurar a todo mundo un standard de vida adecuado para el mantenimiento de la salud.

Asi organizados estos servicios o beneficios, capacítan a cada ciudadano, para que realice su derecho innato de salud, y longividad.

Otra definición de Salud Pública es aquella dada por la Asociación Médica Americana que dice: "Es el arte y ciencia de mantener, protejer y mejorar la salud de las gentes, a traves del esfuerzo una comunidad organizada. Incluye, los arreglos por los cuales la Comunidad, provée de cervicios médicos, a un grupo especial de personas, y tiene que ver con la prevención, o el control de enfermedades que requieren hospitalización, para protejer la comunidad y a los médicamente indigentes.

Asi, como lo hizo notar, la Señorita Hanlon; "En Resumen hay, por lo tanto, evidencia por las mismas definiciones, un gradual aumento en los huéspedes de salubridad pública. De acuerdo con los avances de los conocimientos médicos y científicos al parejo del progreso politico y social, los trabajos de Salubridad Publica, se han extendido desde su humilde concepto, sobre saneamiento del medio a groso modo, hasta la adición en secuencia, de ingenerieria sanitaria, medicina fisico-medica preventiva, ciencia médica mental preventiva; y el más reciente aspecto social positivo, y de promoción de la medicina personal; nuevamente citando a la Señorita Hanlon, en el panorama de la Salud Pública. "¿Cuáles son entonces los terrenos de actividad en la Salud Pública¿ En vista de la presente definición caen potencialmente en cuatro categorías:

1. Los campos donde la actividad debe ser la base de la comunidad, como es la supervisión de alimentos, suministro de agua y de leche de la comunidad, control de insectos, prevención de la polulación en la atmósfera.

2. Aquellos campos, encargados de la prevención de enfermedades con desabilidades, o muerte prematura.

   a. Enfermedades trasmisibles incluyendo infecciones.

   b. Deficiencias dietéticas.

   c. Efecto de drogas y narcóticos, habitualmente usados.

   d. Manifestaciones alérgicas, y sus fuentes para la comunidad.

   e. Ciertos desórdenes en la conducta mental y personal.

   f. Salud ocupacional.

   g. Cáncer (primeramente evitar su progreso, prevención hasta cierto grado).

   h. Enfermedades cardiovasculares.

   i. Condiciones asociadas con el riesgo de maternidad, crecimiento y desarrollo.

   j. Ciertas condiciones hereditarias.

   k. Accidentes industriales en la casa y en la comunidad.

   l. Rehabilitación de víctimas por accidente, o enfermedad.

   m. Caries dentales.

3. Aquellos campos de la medicina que necesitan una empresa organizada.

4. Investigación. Ningun departamento de salud puede ignorar la investigación científica, y evaluacion y llamarse próspero.

Seguramente, con tal delineamiento de responsabilidades, de salubridad pública como se ha mencionado arriba, es evidente que hay la necesidad, de una amplia diseminación de información al público, sobre las miras y objetivos de los programas de salubridad pública federal, estatal y local, para que ellos puedan cooperar, plenamente, haciendo uso de los servicios que se han establecido para la protección de su salud.

Por igual, o tal vez de mayor importancia, es el mejor entendimiento y cooperacion, entre el médico privado, y la salubridad pública. A traves de los años que he trabajado en salubridad pública, he observado que en ocasiones, hay el resentimiento de algunos médicos, porque nuestro programa estatal de salud está invadiendo el dominio de la medicina privada, excepto en el tratamiento de la tuberculosis donde no ofrecemos un programa de curación.

En nuestro programa de detección, hemos descubierto muchos nuevos casos de sífilis,

tuberculosis, diabetes y glaucoma; en cada caso son referidos al médico particular, o a la clinica del condado para su diagnóstico final y tratamiento. Creemos, que tales esfuerzos, son el mejor tipo de educación en salud, y lejos de invadir la práctica privada del médico, de hecho, le proporciona nuevos pacientes, porcentaje que, de no haber sido descubiertos, hubieran permanecido, permanentemente invalidos, y en muchos casos sin lugar a dudas, una carga para el contribuyente.

En Arizona, somos afortunados de tener un apoyo en nuestra Asociación Médica y Dental Estatal, asi como un número de agencias voluntarias influyentes si hemos de obtener nuestro mayor potencial en el 60.

La unión dentro de la Salubridad Pública debe ser mas estrecha que lo que fue en el pasado, porque ninguna puede funcionar a su máximo sin la otra. Así como los conceptos de salubridad pública han cambiado tan radicalmente en las últimas cinco o seis decadas, así debemos esperar mayores y nuevos desafíos en la próxima década. Para mencionar unicamente algunos de los pocos problemas, que hoy dia, estan a la puerta, podemos anotar:

1. El cuidado de la poblacion de ancianos que aumenta rápidamente.
2. Cuidado en enfermos crónicos.
3. El aumento de accidentes de trabajo.
4. Radiación y descarga.
5. Enfermedades de origen genético, los sistemas de aire acondicionado y ventilación forzada, han cambiado nuestro ambiente en casa, en la oficina y hasta en los automóviles. Los viajes al espacio y de propulsión acarrean nuevos problemas.
8. Nuevos métodos de construcción requirirán constante revisión de nuestras ideas, sobre facilidades sanitarias en éstas esestructuras.
9. El creciente uso de pulverizadores y germicidas es una constante amenaza para la salud a menos que se haga bajo las condiciones apropiadas.

Dixon dice: "Para ajustarse a estos nuevos cambios dentro de la comunidad, en cuanto respecta a las agencias oficiales de salud, se requiere una ligera re-definición de la responsabilidad de las agencias de salubridad pública local, a quien deben interesar los seis o siete servicios básicos. Pero yo creo que la comunidad espera que su agencia lleve el mando público, resolviendo cualquier problema de salud que la comunidad desea sea resulto por el gobierno. Esto quiere decir, que sera necesario reforzar la competencia de las agencias en la administracion pública, y modificar los conceptos de salud profesional, con la opinión de la comunidad.

Sería interesante hojear un libro en 1970 y ver como pudimos resolver los desafíos del 60.

"CA" NOW AVAILABLE TO ALL ARIZONA DOCTORS

The American Cancer Society's publication, "CA," formerly on limited distribution in Arizona, is now being made available free of charge, through the Arizona Division to all of Arizona's doctors who indicate an interest in it.

Currently the Division office is preparing a mailing to all doctors in the state, and included are a list of all professional films and literature available and a sample issue of "CA."

Simply notify the Division office, 543 East McDowell Road, Phoenix, of your interest in "CA" for inclusion on mailing list.

RABIES — A Public Health Problem In Maricopa County

V. H. Ueckett, D.V.M., M.P.H., and Stanford F. Farnsworth, M.D., M.P.H.

Since 1955 thirty-seven cases of rabies have been discovered among animals in Maricopa County. These have occurred among both domestic and wild animals. It thus appears that rabies is endemic in central Arizona and that precautions must be maintained to prevent human exposure to this highly fatal infection.

Current standards for prophylactic treatment of individuals bitten or otherwise exposed to rabid animals is fully discussed. Maricopa County is setting an example of combating this troublesome problem that deserves applause.

The need for revision of existing legislation to provide better protection to the human population is pointed out.

IN THE EARLY medical recordings of man there have been references to the disease which today we know as rabies. All physicians have encountered this historical information and many have had an opportunity to treat animal bite cases, consequently, the classics of rabies will be omitted.

Rabies: A Public Health Problem in Maricopa County.

Rabies is endemic in Maricopa County. This can be substantiated from the Arizona State Health Department Laboratory's diagnosis of 37 positive animal cases which were submitted from within the county since 1955. The total for Arizona was 144 rabid animals and included the cat, dog, horse, cow, bat, fox, and others. The animals most recently found to be rabid in Maricopa County were a bat caught near Papago Park and a fox at New River. Thirteen cases of animal rabies were reported in Arizona during 1960. Ten of these (5 foxes, 2 bats, 1 bobcat, 1 dog and 1 horse) were in the area surrounding Scottsdale in Maricopa County. Several coyotes and foxes having symptoms of rabies were observed in this same area, but unfortunately were not submitted for laboratory examination.

Problems Arise in Any Rabies Program

In considering the problems of rabies, we are faced with several facets of rabies control: (1) New legislation is needed to replace currently "antiquated" legislation. Existing law exempts the hunting dog from vaccination. That the statute needs strengthening is obvious since more than half of the animals found to be rabid are wild animals which may come in contact with the hunting or ranch dog. (2) The number of dogs receiving vaccination should be increased since probably less than 30% of the dogs in Maricopa County have received this protection. At least 70% of our approximately 70-80,000 dogs should be vaccinated in order to reach the level of vaccination recommended for the control of rabies. Since numerous cats were diagnosed as positive for rabies, they, too, should be vaccinated. (3) An increased number of humane officers armed with effective powers to control the stray dog population, and improved control of wildlife are examples of other

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important measures needed in a good rabies control program.

Maricopa County's Rabies Control Activities

At the present time the Maricopa County Health Department is engaged in or sponsoring the following activities and programs:

(1) Improved rabies control legislation will be presented to the next legislature.

(2) The County will continue its participation in the research project with antirabic vaccine (High Egg Passage Vaccine – Lederle) which now has approximately 190 participants.

The development of rabies vaccine prepared in avian embryos (chicken or duck) has possibly provided a solution to the question of best "before bite" and "after bite" preventive measures. These vaccines, essentially free of central nervous system tissue, do not induce neuroparalytic accidents, usually attributed to the demyelinating reaction often resulting from Pasteur treatment with conventional vaccines of nervous tissue origin. The vaccine using duck embryo has been licensed and is in use today. The avian vaccine made from chick embryos injected with high egg passage (HEP) Flury strain virus is under investigation at the present time.

The project presently under way in Maricopa County requires 2 ml. of reconstituted chick embryo vaccine (HEP) intramuscular with 4 doses administered about 7 days apart. A blood specimen is taken at the beginning of the series and again 30 days after the 4th dose. These specimens are sent to the Lederle Laboratories to determine whether or not a rise in titer has occurred. The results of this project and similar projects throughout the country are very encouraging.

The Maricopa County Health Department has additional programs under way:

(3) A surveillance of bats in the County is in progress. This includes trapping, identification, submission of bats to the Arizona State Laboratory and Southwest Rabies Investigation Station in New Mexico for rabies examination.

(4) The County will continue to offer assistance to the practicing physician in obtaining necessary epidemiological information concerning animal bites. The physician may need additional information in connection with the initiation of anti-rabic treatment. A public health veterinarian is on the staff of the Maricopa County Health Department and is available to assist in such investigations.

(5) The Health Department will keep the physician informed on the latest advances in the treatment and control of rabies and other zoonoses as this information becomes available to the department.

The Doctor's Problem – A Dilemma

Frequently the doctor's greatest dilemma in animal bite cases is "should treatment be administered?" To the patient who telephones, the physician should recommend immediate cleansing of the wound with running water (flushing action) using liberal amounts of soap, before coming to the office. The physician should employ the above method and could possibly increase the effectiveness by using a 20% solution of green soap, a syringe and a blunt needle to irrigate all parts and depths of the wound. In deep, puncture-type wounds which cannot be cleansed efficiently with soap, it may be necessary to use a strong mineral acid such as nitric acid. (Where possible, bite wounds should not be immediately sutured.) The immediate cleansing of the wound is very important. The patient should also be instructed to confine the animal or have it watched until it can be placed under proper observation. The humane officer should be called immediately or where possible the animal should be placed in a veterinary hospital at once. (This is a present health requirement.)

Criteria for Determination of Rabies Exposure

It is strongly recommended that the following criteria be employed in the determination of whether treatment should be initiated.

For the purpose of management of human exposure, a rabid animal is defined as one which according to Dr. T. F. Sellers, Director of the Georgia Department of Health: (1) is proved to be rabid by laboratory methods; (2) is clinically rabid by veterinary diagnosis; (3) dies

from unknown causes and is not subjected to laboratory examination within ten days after biting; (4) disappears after biting and cannot be located; (5) bites without provocation and is killed before confirmatory brain lesions have had time to develop or before mouse inoculation has been performed.

The decision regarding treatment can best be made by the physician. In the past he had to weigh the possible hazards of treatment against the danger of rabies, but this is no longer true because little or no neurotropic reaction has occurred in man after injection of duck embryo vaccine, except individuals allergic to ducks or duck eggs. (This may or may not be true in 100% of the cases since not all patients react the same and this treatment has been employed for a relatively short period of time.) The physician should take into consideration the possible or actual presence of rabies in the area and in the species of animal plus clinical behavior of the biting animal and the vaccination status of the biting animal.

The Maricopa County Health Department, when asked by the physician for assistance in determining whether or not treatment should be initiated, makes its recommendations based on a thorough investigation and generally by modifying the recommendation of Dr. Sellers and the World Health Organization.

If the biting animal is a large wild animal such as fox, bobcat, coyote, skunk, and others, immediate treatment is recommended.

Recommendations Following Bat Bites

There should be no hesitation in initiating treatment in bites inflicted by bats. Several facts should be considered: (1) the bat is both a symptomatic as well as an asymptomatic carrier. (2) the absence of Negri bodies in the bat brain does not assure that the bat was free of rabies. Not only do many rabies-positive bat brains lack Negri bodies, but many rabies-infected bats possess virus in the salivary glands only. (3) about 15% of our commonest Southwestern bat species were recently determined infected, but the infected bats showed no symptoms. (Dr. Denny G. Constantine, Chief, Southwest Rabies Investigation Station, New Mexico.)

In bites involving dogs, an important fact to remember is that dogs are known to emit the rabies virus in the saliva toward the end of the incubative period, two to three days before symptoms appear. If a dog remains healthy past the seventh to tenth day it is not likely that he was shedding the virus when he bit the victim.

Types of Treatment Available.

Once it has been established that post-exposure treatment is necessary, the physician has a choice of the following: (1) Semple vaccine (1919) a phenolized fixed virus vaccine (2) ultra-violet irradiated fixed virus vaccine (3) a vaccine prepared in duck embryos, inactivated with beta-propiolactone (4) plus anti-rabies serum (hyperimmune serum).

The anti-rabies serum is derived from the blood of horses which have been hyperimmunized by replicate injections of fixed rabies virus. If the physician elected to initiate treatment using the hyperimmune serum in conjunction with the duck embryo vaccine or any of the other types of vaccine mentioned several facts should be taken into consideration: (1) the hyperimmune serum confers passive immunity and gives immediate protection for a short period of time until the mentioned vaccine treatment can confer active immunity. The hyperimmune serum is essential in cases where the incubation period is short. (16-22 days) (2) a sensitivity test should be performed before initiating the use of hyperimmune serum, since serum sickness is a comparatively common side reaction in the administration of equine serum. (3) the hyperimmune serum loses its effectiveness if used more than 72 hours after the exposure. It has been used in some instances where there was hope that some protection could be gained before multiplication and migration of the virus to the central nervous system. (4) the recommended treatment, when using hyperimmune serum with other active immunization agents, is one therapeutic dose of serum (administered within seventy-two hours, preferably 24 hours) and at least 14 daily doses of vaccine. In cases where serum is followed by a full course of vaccine it is suggested that two supplemental doses of vaccine be administered at 10 and 20 days following the completion of the usual vaccine schedule. Where possible, these supple-

mental doses should be with a vaccine of non-nervous-tissue origin. (WHO Fourth Report No. 201).

The above recommendations are only a guide and in certain situations specific conditions may warrant modifications. Examples are: (1) Some of the serum dose might be infiltrated into the tissue beneath the wound, when this is feasible (total amount of serum depends on weight of patient) (2) a single dose of serum might be administered while the dog is being observed for 7 - 10 days. (3) three doses of vaccine at daily intervals and no further vaccine as long as the animal stays healthy for 7 - 10 days. If interval between exposure and serum administration is greater than 24 hours, or if there are severe wounds about the head or neck, 2 or 3 times the recommended amount of serum might be administered. Application of ordinary antiseptics and antibiotics or anti-tetanus procedures should be initiated, regardless of anti-rabies treatment when indicated.

Precautions

Anti-rabies serum delays virus propagation, thus allowing more time for the vaccine to induce antibodies to the virus, but it should be remembered that serum alone is of no value in the treatment of rabies. After a sensitivity test (for the anti-rabies serum) has been performed, a careful history should be taken for past evidence of angioneurotic edema, asthma or other allergies including sensitivity to horse serum. It is believed that if more than one dose of therapeutic serum is given or less than the 14 daily doses of vaccine are used, there may be an interference with antibody production. The same syringe should not be used in administering the vaccine and serum, nor should the same site be used because there may be some neurtalization of the vaccine.

With the evidence of the endemicity of rabies in Maricopa County every effort should be made toward the control and the eventual elimination of the disease from the animal populations. The elimination may be effected by setting up transmission barriers such as domestic animal vaccination, reduction of excessive numbers of wildlife vectors, and elimination of stray dogs.

Until rabies is controlled the physician, victim, and health authorities will be continually faced with the dilemma of treatment, but this old disease, like the new zoonoses, cannot be controlled without the concerted effort of all involved.

W. B. SAUNDERS COMPANY features the following recent books in their full page advertisement appearing elsewhere in this issue:

CHERNIACK AND CHERNIACK – RESPIRATION IN HEALTH AND DISEASE – Clearly explains the mechanisms by which pathological processes produce clinical findings in respiratory disease.

FLUHMANN – THE CERVIX UTERI – Fully covers diagnosis, clinical manifestations, medical and surgical management.

TENNEY AND LITTLE – CLINICAL OBSTETRICS – Authoritative management of 24 problems which currently cause difficulty in safe delivery.

This Is The Biological Warfare Threat

LeRoy D. Fothergill, M.D.

Epidemics, epizootics and epiphytotics will be directed against civilian, rather than military, targets. The stringent requirements of high infectiousness, stability during dissemination, military availability and lack of immunity are met by many pathogens presently absent or rare in this country. They may be introduced by sabotage or, under proper meteorological conditions, very effectively by aerosols of the 1 to 5 micron range delivered by weapons systems. Extensive preparation on local level is essential to defense.

THE THREAT of biological warfare cannot be ignored. Every community in our land must examine its potentialities in detail. The greatest danger may not lie in its capacity to kill people, but rather in the destruction of the economy through the incapacitation of the working force and the reduction of crops and domestic animals.

Biological warfare is primarily a strategic weapon for two major reasons: First, it has no quick-kill effect. The incubation period of infectious diseases renders the agents thereof unsuitable for hand-to-hand encounter. A man can be an effective fighting machine throughout the incubation period of most infectious diseases. Secondly, the optimum effectiveness of BW would accrue from the possibility of covering very extensive target areas. Our most thoughtful attention must be given to the latter in planning for civil defense.

One of our first considerations, of course, is the character and properties of agents that might be used. Only relatively few micro-organisms are suitable for BW purposes. These possess certain general characteristics that meet the special criteria required for inclusion in an arsenal of agents. Some of these characteristics are:

1. The agent must be highly infectious. Judgment as to possession of this characteristic is based upon a variety of evidence, principally medical and epidemiological. Very convincing evidence is suggested, of course, in the case of those agents which frequently cause infection in laboratory workers. Positive evidence has been obtained for many microorganisms by direct infection of volunteers by various routes of administration. There is an extensive literature reporting such results.

Presented at the Ninth U. S. Civil Defense Council Conference, Medical-Health Section, Sept. 21-22, 1960, Minneapolis, Minn.

Scientific Advisor, U. S. Army Chemical Corps Biological Laboratories.

This material was originally presented in a Symposium on Non-Military Defense, at the 137th Meeting of the American Chemical Society, Cleveland, Ohio, April 1960, and was subsequently published in Advances in Chemistry Series, No. 26, American Chemical Society.

The aerosol dose of two microorganisms was determined experimentally in human volunteers, recently, during the course of studies of the effectiveness of vaccines. The dose of *Coxiella burnetii,* the causative agent of Q fever, was found by Tigertt and Benenson(1) to be 10^{-9} grams of homogenized, infected chick embryo tissue. Saslaw, et al(2) found the aerosol dose of *Pasteurella tularensis* for man to be 25 to 50 organisms. Incidentally, it was found in these experiments that a living, attenuated organism, used as a vaccine, provided excellent protection against infection in individuals subsequently exposed to a virulent organism.

2. The agent must have sufficient viability and virulence stability to meet minimal logistic requirements. This property can be improved by appropriate research.

3. The agent must be capable of being produced on a militarily significent scale.

4. The agent should not be unduly injured by dissemination in the field and it should have a minimum decay rate in the aerosol state.

5. There should be minimal immunity in the target population.

It is quite obvious that there are many microbiological agents that do not meet these basic requirements for BW purposes. Conversely, there are relatively few organisms that meet them.

There are certain military characteristics also that should be kept in mind. Agents may be selected for the purpose of accomplishing a particular mission. In other words, an enemy might use lethal agents or agents that may cause varying degrees of incapacity.

There are two general methods whereby agents might be applied to a target. The first, and most important of these, is through the overt military delivery through weapons systems designed to create an aerosol or cloud of the agent. The second would be through covert methods.

The basic concept of creating a cloud or aerosol of biological agents stimulated much research concerning the behavior and properties of small particles containing viable microorganisms. This research has yielded, among other things, much information concerning the pathogenesis of respiratory infections. One of the major contributions has been the demonstration of the importance of particle size in the initiation of infection. The natural anatomical and physiological features of the upper respiratory tract, such as the turbinates of the nose and the cilia of the trachea and larger bronchi, are capable of impinging out the larger particles to which we are ordinarily exposed in our daily existence. Very small particles, in a size range of one to five microns in diameter, are capable of passing these impinging barriers and entering the alveolar bed of the lungs; an area highly susceptible to infection. This is illustrated by the data in Table 1(3).

These very small particles remain suspended in the air for a long period of time, particularly if there is some atmospheric turbulence. The smaller the particle, the further it will travel downwind before settling out. Such an aerosol will diffuse through structures in much the same manner as a gas, thus giving it a remarkable property for target searching.

There are a number of critical meteorological conditions that must be met for a biological aerosol to produce optimum effect. For example, bright sunlight kills living microorganisms suspended in air. There are optimal humidity requirements for most agents when airborne. Neutral or inversion meteorological conditions are necessary for a cloud to travel along the surface. It will rise during lapse conditions. There are certain times (late night and early morning) during the 24-hour daily cycle when most of these conditions will be met.

The behavior of cluds of small particles can be illustrated by the following field trials, reported by Fothergill(4).

In the first trial an inert substance was disseminated from a boat traveling some ten miles offshore under appropriately selected meteorological conditions. Zinc cadmium sulfide, in particles of 2.0 microns in size, was disseminated by techniques developed by Perkins et al(5). This material fluoresces under ultraviolet light

INFLUENCE OF PARTICLE SIZE ON RESPIRATORY VIRULENCE OF FOUR AGENTS FOR GUINEA PIGS

PMD RANGE (μ)	AGENT RESPIRATORY LD_{50} VALUES			
	BACILLUS ANTHRACIS (SPORES)	PASTEURELLA TULARENSIS (BACILLI)	COXIELLA BURNETII (RICKETTSII) (1)	VENEZUELAN EQUINE ENCEPHALOMYLITIS (VIRUS) (2)
0.3-1.5	23,000	2.48	1,000,000	20
4.0-6.5	221,000	6,500	52,700,000	19,000
8.5-13	700,000	19,500	$> 2.4 \times 10^9$	280,000

(1) DOSE IN GUINEA PIG IP ID_{50}

(2) DOSE IN MOUSE IC LD_{50}

Table No. 1

which facilitates its sampling and assessment. Four hundred and fifty pounds were disseminated while the ship was traveling a distance of 156 miles.

The results are described in Figure 1, following.

This aerosol traveled a maximum sampled distance of some 450 miles and covered an area of over 34,000 square miles. The concentration of particles could have been increased by increasing the source strength which was small in this case.

The behavior of a biological aerosol, on a much smaller scale, can be illustrated by a field trial conducted with a non-pathogenic organism. An aqueous suspension of the spores of *B. subtilis, var. niger,* generally known as *Bacillus globigii,* was aerosolized using commercially available nozzles. A satisfactory cloud was produced even though these nozzles were only about 5 per cent efficient in producing a cloud in the size range of 1.0 to 5.0 microns. In this test, 130 gallons of a suspension of these spores was aerosolized. The spraying operation was conducted along a two-mile course from the rear deck of a small Naval vessel, cruising two miles offshore and vertical to an onshore breeze. There was a slight lapse condition, a moderate fog, and 100 per cent relative humidity. A network of sampling stations had been set up on shore. These were located at the homes of Government employees and in Government offices and buildings within the trial area.

The results of this trial are illustrated in Figure 2. An extensive area was covered. The cloud was sampled for a distance of 23 miles downwind from the source. Approximately 100 square miles was covered within the area sampled. It is quite likely that an even greater area was covered, particularly downwind.

This trial, then, was conducted with a living biological agent and it traveled some 23 miles downwind. This experiment could be criticized

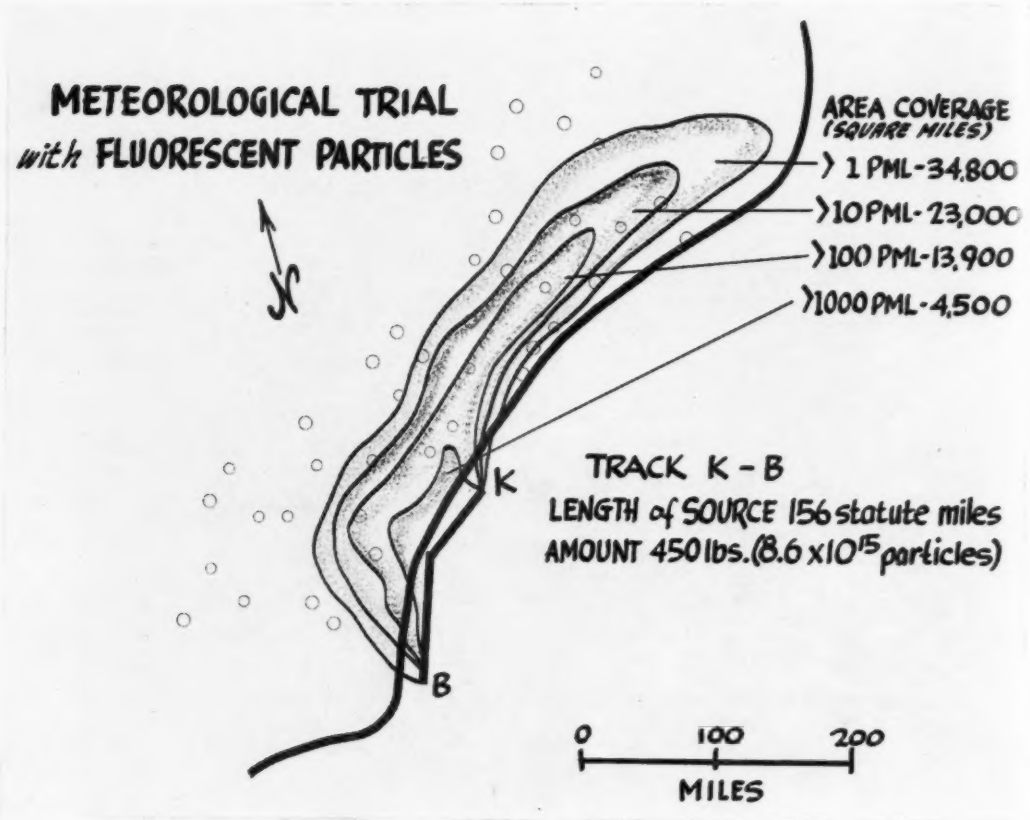

FIGURE 1

PM/L = Total particles collected at a sampling rate of 1 liter of air per minute. These figures, multiplied by the breathing rate, (i.e., 15 liters per minute) would give the inhaled dose.

on the basis that it was conducted with a bacterial spore which is subject to very little biological decay. On the other hand, in a recent trial conducted with a vegetative pathogen, guinea pigs were infected for a distance of 15 miles downwind of the origin of the aerosol. Etxrapolative calculations suggested that the latter aerosol probably traveled a good deal further than the sampled distance.

The former biological trial was carried out with a line source only two miles in length and the aerosol was generated by "jerry-rigged" equipment. In view of this, it requires no imagination to conceive of:

1) The design of specific military equipment to accomplish this;

2) The possibility of increasing the source strength to any desired degree; and

3) Extending such a line for 10, 100, 500 miles or for any distance for which equipment might be designed, thus covering a very extensive target area.

The possibility of the strategic coverage at long range of very extensive target areas is the major threat of BW to our nation. One of the major problems defensively would be the medical care of the large number of casualties that might occur. It is mandatory that there be detailed advance planning for this eventuality at the community level in every city, village and hamlet.

There are certain other effects, however, that are important defensively and which must be emphasized. These have not received adequate attention in the past. Such an extensive aerosol coverage with an infectious agent might create

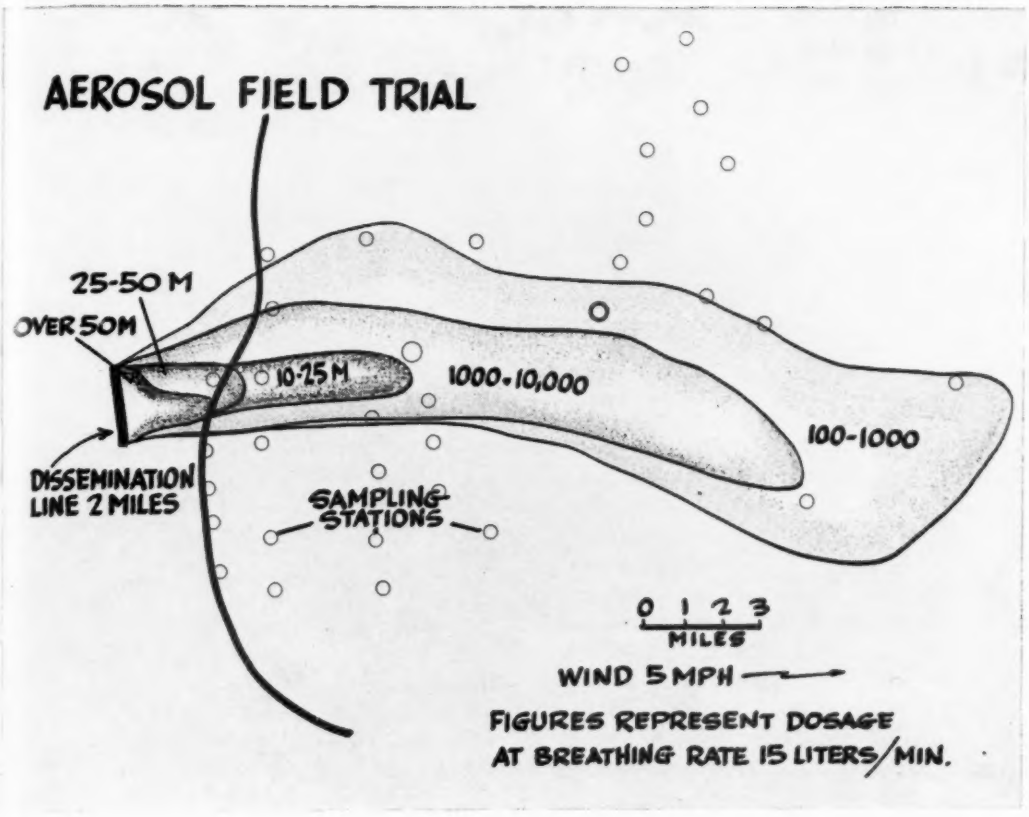

FIGURE 2

certain ecological and environmental problems of great importance. For one thing, bearing in mind the great capability of aerosols to penetrate structures, it is quite obvious that there would be widespread contamination throughout the target area; contamination of hospitals, food supplies, public and domestic kitchens, restaurants, warehouses, etc. In some instances, depending upon the agent involved, there may even be additional multiplication in some of these contaminated products; for example, the well recognized ability of the typhoid bacillus or the dysentery group of organisms to grow in milk.

There is another and an even more serious problem to be considered. All living things in such a target area would inhale the aerosol. This would involve a variety of animals and birds, both domestic and wild. There may be some very serious consequences from this in that new enzootic foci of disease might be established. For example, an aerosol of the plague bacillus might seek out rats in their burrows or squirrels in their dens.

In view of these target considerations, it might be well to reconsider types of agents for which we should plan defense. Agents can be divided into three broad categories for this purpose.

First, we must face the threat of the military delivery of truly exotic agents against our human and animal population and against our agricultural crops. Indeed, some of these agents, such as the viruses of Rift Valley fever or louping ill, might be infectious for both man and animals. Some, such as the viruses of Japanese B encephalitis, Russian spring-summer encephalitis and Venezuelan equine encephalomyelitis, might become established in some of the bird or animal population in the target area and thus create serious new enzootic foci.

Secondly, we must face the threat of the use of agents of disease against man, animals or crops that had been eliminated from our country at the cost of a great deal of money and effort. Such diseases as Asiatic cholera, yellow fever, smallpox and malaria of man, and pleuropneumonia, glanders and foot and mouth disease of animals, are examples. If such diseases were reestablished, their control again might be exceedingly costly.

Thirdly, agents that are currently endemic or periodically epidemic might be used and some might be disseminated over areas where they are not now prominent. Among these may be mentioned the organisms of plague, tularemia, tuberculosis, brucellosis, coccidioidomycosis, etc. Our country has spent millions of dollars, for example, for the eradication and control of brucellosis in agricultural animals. Cows, calves, swine, sheep and goats would breathe an aerosol of this agent disseminated over a large target area. This might then re-infect animals in large areas that are now relatively free of this disease.

The possibility that mixtures of agents might be used should not be ignored. Some antianimal agent might be included with an antipersonnel charging.

A variety of biological agents are, of course, suitable for delivery through enemy sabotage which creates many problems in defense. One's imagination can run wild in this regard. There are a few obvious targets, however of great importance. The air-conditioning and ventilating systems of large buildings are obvious points for attack. Our country possesses enormous food processing industries, including the preparation of soft drinks, and the processing of milk and milk products, that are subject to sabotage. Huge industries are involved in the production of biological products, drugs and cosmetics which are liable to this type of attack.

Specific biological warfare agents may be used for the reduction or destruction of agricultural crops and domestic animals – in other words, antifood biological warfare. The importance of food, especially during war, needs no emphasis. Some crops are of critical importance in other aspects of the economy. The fiber crops, cotton and hemp, are examples. Some industrial chemicals, such as alcohol, rubber, and certain oils are produced from agricultural crops. Last but not least, certain pleasure-producing crops, such as tobacco, tea, coffee and various herbs and spices, should be mentioned. A number of important drugs, such as digitalis, opium and quinine, are derived from specific crops. Domestic animals contribute a fair share to the overall economy. In addition to meat, dairy and poultry products, there are many other important products of the animal industry, such as draught power, transport in undeveloped areas, fertilizer (manure and bone meal), leather, wool, glue and gelatin and various very important pharmaceutical products. A critical item, in considerating defense, is the embryonated egg and its use in the preparation of various viral and rickettsial vaccines.

In all wars in the past, military efforts have been devoted to the reduction of the enemy's food supply. This has always been an important strategem in naval blockades. The grain-laden freighter has been a prime target for the submarine. Antifood biological warfare could be decisive in any major conflict of long duration. An attractive feature of anticrop warfare is that it does not destroy man's physical assets – his cities, his bridges, his railroads, etc. The soil, moreover, is not rendered infertile for agricultural production the following year. This situation would be somewhat more serious in the case of antianimal BW, since it would take several years to develop new herds.

Two types of anticrop agents with very different characteristics might be used. One class is represented by a group of chemical agents that act as growth-regulating hormones, such as 2,4-dichlorophenoxyacetic acid. These chemicals are active in extremely small amount. This particular compound is most active against the broad-leaved species. It is manufactured on a large scale for use as a weed killer.

The chemical agents are not, of course, self-propagating and will affect only those plants to which they have been applied. On the other hand, they are much more catholic in the variety of plants affected than is the case with the

highly specific biological agents.

The biological anticrop agents would, undoubtedly, be the most damaging if used on a large area basis. Agents would be selected for their capacity to propagate. Experience with natural epiphytotics indicates that large crop areas may be covered. The spread of stem rust of wheat up the Mississippi Valley and Great Plains area and on into Canada is a typical example. The famine in Ireland in 1846 and 1847 due to a widespread epiphytotic of late blight of potatoes is illustrative also. Blast disease of rice has caused repeated damage to the rice crop in the Orient.

Our country is in a relatively favorable defensive position in anticrop warfare. We are in the unusual position of finding overproduction of agricultural crops a major problem. As a result, we have several years of most major products in storage. Our agriculture, moreover, is very diversified and biological agents are highly specific. Actually, those countries that are generally dependent for climatic, agronomic or traditional reasons, on a single crop are the most vulnerable.

Our position with respect to antianimal agents, on the other hand, is critical. Our animal populations are highly susceptible to the major plagues of livestock. Introduction of these agents could be devastatingly serious.

This, then, is the BW threat. This is the framework upon which defensive thinking and planning can be built. Other speakers will present plans and procedures in detail for providing a readiness in defense.

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1. Youmans, J. B.: Am. J. Med. 25:659 (Nov.) 1958

cardiac diseases "Who can say, for example, whether the patient chronically ill with myocardial failure may not have a poorer myocardium because of a moderate deficiency in the vitamin B-complex? Something is known of the relationship of vitamin C to the intercellular ground substance and repair of tissues. One may speculate upon the effects of a deficiency of this vitamin, short of scurvy, upon the tissues in chronic disease."[2] 2. Kampmeier, R. H.: Am. J. Med. 25:662 (Nov.) 1958.

arthritis "It is our practice to prescribe a multiple vitamin preparation to patients with rheumatoid arthritis simply to insure nutritional adequacy . . ."[3]
3. Fernandez-Herlihy, L.: Lahey Clinic Bull. 11:12 (July-Sept.) 1958.

digestive diseases Symptoms attributable to B-vitamin deficiency are commonly observed in patients on peptic ulcer diets.[4] Daily administration of therapeutic vitamins to patients with hepatitis and cirrhosis is recommended by the National Research Council.[5] 4. Sebrell, W. H.: Am. J. Med. 25:673 (Nov.) 1958. 5. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition, National Academy of Sciences and National Research Council, Washington, D. C., 1952, p. 57.

degenerative diseases "Studies by Wexberg, Jolliffe and others have indicated that many of the symptoms attributed in the past to senility or to cerebral arteriosclerosis seem to respond with remarkable speed to the administration of vitamins, particularly niacin and ascorbic acid. These facts indicate that the vitamin reserve of aging persons is lowered, even to the danger point, more than is the case in the average American adult."[6] 6. Overholser, W., and Fong, T.C.C. in Stieglitz, E. J.: Geriatric Medicine, 3rd edition, J. B. Lippincott, Philadelphia, 1954, p. 264.

infectious diseases Infections cause a lowering of ascorbic acid levels in the plasma; and the absorption of this vitamin is reduced in diarrheal states.[7] 7. Goldsmith, G. A.: Conference on Vitamin C. The New York Academy of Sciences, New York City, Oct. 7 and 8, 1960. Reported in: Medical Science 8:772 (Dec.10) 1960.

diabetes Diabetics, like all patients on restricted diets, require an extra source of vitamins.[8] "Rigidly limiting the bread intake of the diabetic patient automatically eliminates a large amount of thiamin from the diet. . . . There is some evidence of interference with normal riboflavin utilization during catabolic episodes."[9]
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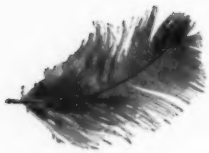

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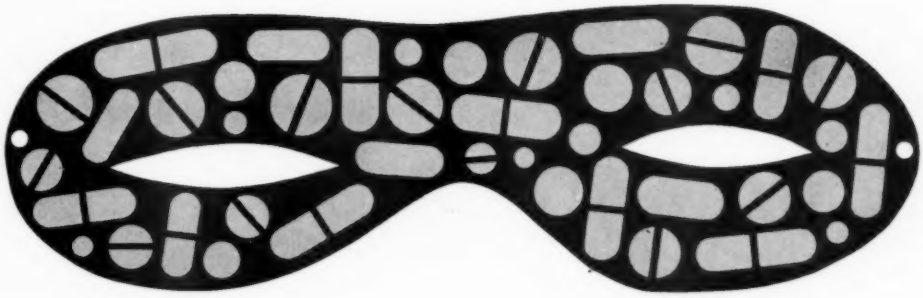

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Rhode Island Medical Journal,
January, 1961

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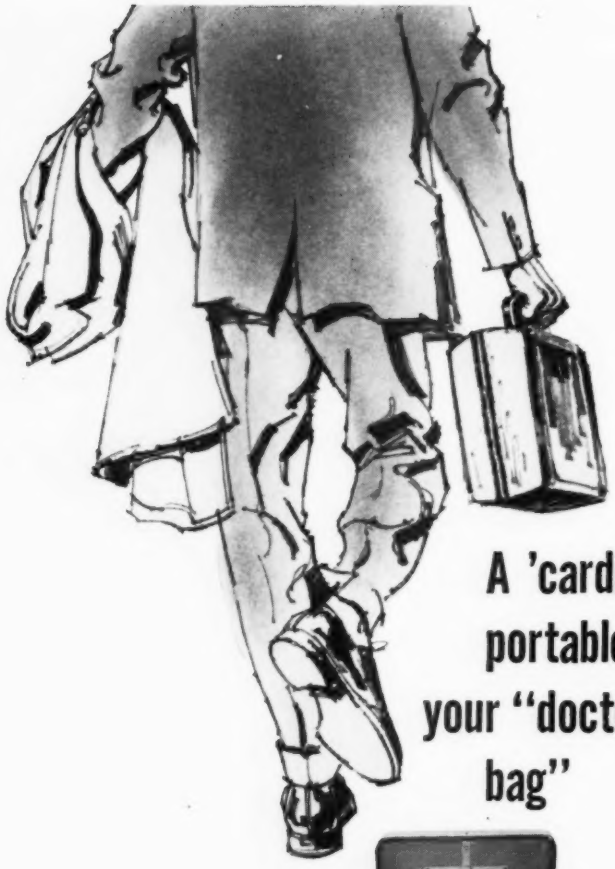

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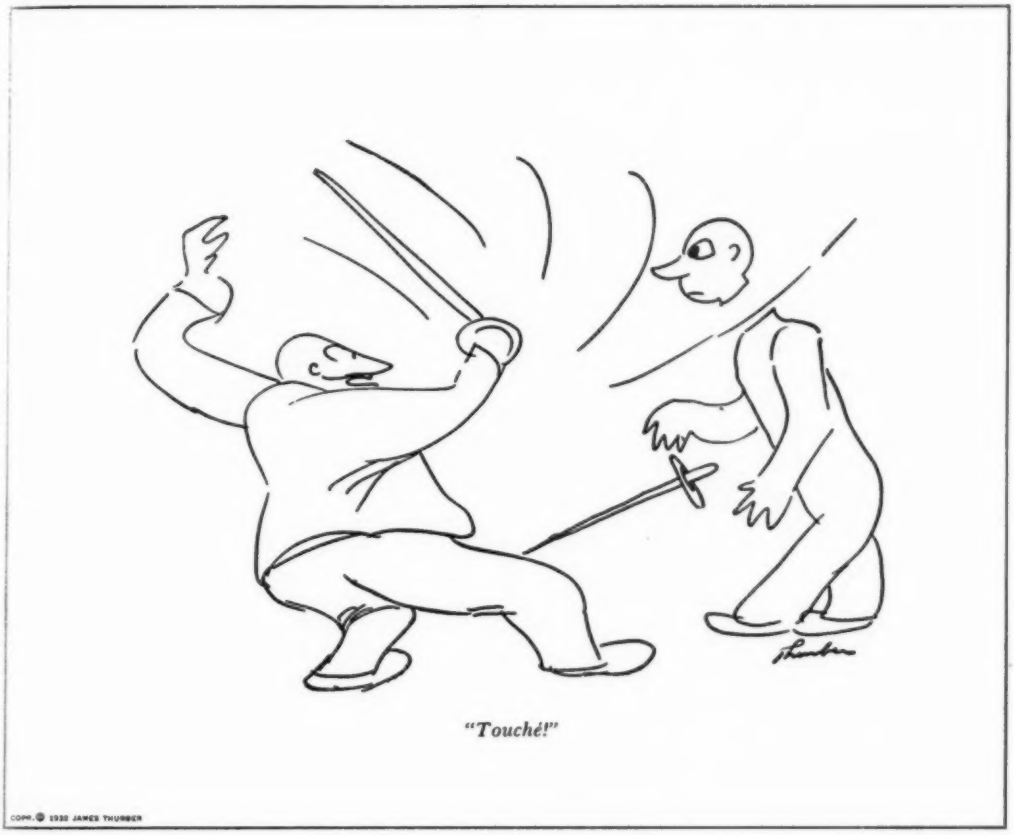

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Plans continue to take shape for the next meeting of the Medical Society of The United States and Mexico which will take place in Hermosillo, Sonora, Mexico December 6, 7 and 8 of this year.

Some modifications of the policies under which these meetings have been organized in the past will be applied in Hermosillo. Emphasis on social events will be limited, in favor of a greater variety in the scientific program while maintaining a level of high quality in the papers. An effort will be made to have some symposia or round tables as well as wet and dry clinics on certain topics. For example, coccidodomycosis is endemic in a good portion of the state of Sonora, and much interest and experience has been gathered among the physicians in the Hermosillo area in this disease so that a session on this topic would be welcome. We will attempt to limit the papers given to six from each country.

In September more information on the meeting and a more definitive version of the program will be mailed to the members.

Purchase of a translation electronic unit by the Society is being considered. This equipment makes possible the simultaneous verbal reception of one paper in both Spanish and English. While the speaker gives his contribution in his mother tongue to the audience in general, those in attendance who only understand the other language will be able to hear it in that language through a version spoken into the transmitting unit and heard only by those holding individual receivers. This should allow universal understanding and appreciation of the papers. Such a system is employed in multilingual gatherings, such as the U.N.

The Society is also taking a stand in the controversial ECMFG examinations and its regulations governing the employment of interns and residents in U.S. hospitals especially from Mexico. After consultation with members of our Executive Committee in Mexico and in the United States we have written the Educational Council advocating certain basic modifications in the program, which would allow Mexican physicians to be employed by U.S. hospitals prior to taking the ECMFG examination, on a probationary basis as clinical clerks with limited responsibilities for a period of approximately six months. During that time the employer hospital would commit itself to an intensive didactic program preparatory to taking the examination, which would emphasize language courses, as well as a medical teaching program.

An effort will be made to provide the readers with current information in the monthly issues of Arizona Medicine concerning the activities of the Society, especially in connection with our forthcoming meeting in Hermosillo.

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DUKE R. GASKINS, M.D.
MEDICAL DIRECTOR

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Duke R. Gaskins, M.D.
Medical Director

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The President's Page

Our Rapport

Leslie B. Smith, M.D.

Leslie B. Smith, M.D.

We were highly complimented by the unsolicited comments given by one of our experienced exhibitors. This exhibitor, who chooses to have his name remain anonymous, requested the privilege of reviewing his observations at our 1961 meeting, and compared them with some of his previous experiences with us. He stated that . . . the doctors were much more friendly this year . . . they were less cold . . . they did not seem to be carrying a chip on their shoulders . . . they actually went down the aisles arm in arm rather than as strangers . . . they seemed to be unified and not a group of divergent closed cliques which were about to do battle with each other. He further stated that he could not explain the cause or causes of this change from one of antagonism to one of harmony, but he wished to assure me that the feeling of congeniality was felt by virtually all of the exhibitors in the big top. These observations have been voiced by others.

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Editorials

The Brainwashed Doctor

How does a man determine a fact? First of all, how does he determine a scientific fact? Specifically, how does a physician establish medical fact? Ideally by research – by long hours in the laboratory or by painstaking and controlled observations at the bedside, in the operating room, in the consulting chamber. In default of investigative opportunity, with its associated statistical checks, often through personal experience, at first perhaps largely intuitive, but gradually accumulating into a mass of supportable clinical wisdom. Finally, in a day when learning is so vast that no one man can be individually knowledgeable about even a small professional field, each doctor must appeal to authority, preferably unbiased authority. When authorities disagree, he tries to match opposing or supplementary or differing judgments on the question at issue. This technique holds every decision as only tentative, subject to constant review and to change in the light of altering evidence.

How does this same physician, this earnest

ARIZONA MEDICINE

ARIZONA MEDICINE
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CONTRIBUTIONS

The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules should be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English or Spanish, especially with regard to construction, diction, spelling and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
3. Be brief, even while being thorough and complete. Avoid unnecessary words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.
6. Exclusive Publication – Articles are accept for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.
7. Reprints will be supplied to the author at printing cost.

Editorials of **Arizona Medicine** are the opinions of the authors and do not necessarily represent the official stand of The Arizona Medical Association. The opinions of the Board of Directors may be sought in the published proceedings of that body.

advocate of scientific method, seek reality in the social field? How does he make his political decisions as a citizen? How does he reach a consensus with his fellows on the economic crises that affect medicine? Unfortunately from sources that regularly represent only one side of the debate. From AMA handouts, from the editorials of conservative newspapers, from middlebrow magazines, from the speeches of right-wing politicians, and lamentably too often from the kind of delusionary nonsense that is found in pamphlets circulated by reactionary paranoids. Once crystallized the beliefs thus formed are almost irreversible. They become tenets to be defended against the infidel with holy fervor. And there is small excuse in the rebuttal that the "liberals" have been fed equally predigested pap, only of a different flavor.

Here then is a plea that this man, so well-informed, so cautious, so skeptical and fair-minded in medical matters, exert the same care in his social and economic conclusions. He cannot experiment; he knows that he can observe only through vision distorted by his own prior convictions; and he knows that he must distrust his own automatic responses as influenced unconsciously by self-interest. There remains therefore only appeal to information — to broad, widely based, balanced information. It is hard, perhaps impossible, in this age of propaganda and public relations, to find a totally objective political opinion. One can at least examine all sides of a problem.

To counter his reading of *Time* and *Life*, the doctor can at the very minimum try *Newsweek* and the Sunday *New York Times*, or perhaps one of the liberal weeklies such as the *Nation* or the *New Republic*. To square the stories in that conservative Republican newspaper, let him also subscribe to a liberal Democratic sheet. As antidotes for broadsides from the AMA, the American Association of Physicians and Surgeons, the National Association of Manufacturers, or the U. S. Chamber of Commerce, he can obtain published blasts from the opposition, from the AFL-CIO, from the American Civil Liberties Union, from the Americans for Democratic Action. Before he swallows whole what is said in the *Reader's Digest*, the *Saturday Evening Post*, *U. S. News and World Report*, or the *National Review*, he would do well also to scan journals of opinion like the *Saturday Review*, the *Progressive*, the *Reporter*, *Commentary*, the *Atlantic*, o *Harpers*. Let him weigh columnist against columnist, journalist against journalist, Marqui Childs against George Sokolsky, Walter Lippmann against David Lawrence, James Reston against Holmes Alexander. Everyone can make his own list, fairly to offset the crusaders of the left by the defenders of the right. This entreaty is only for tolerance, for wide reading, for the open mind, for an attempt to view the full spectrum of opinion.

It is tempting to speculate on the results if every American physician suddenly decided to start fresh on his politico-economic conceptions. To wipe his mind clean of the predilections he has gathered. To disregard the special allegations and alarums of the missionaries of the true faith. To begin dispassionately to construct for himself a social credo built from the best available facts. Maybe he would end up with exactly the same dogmas to which he now adheres. And maybe not.

Lindsay E. Beaton, M.D.

EYE PROTECTION

A News Bulletin received by the Editor from the National Medical Foundation for Eye Care requests members of the Medical Profession to be alerted to the dangers of the rays of the sun during solar eclipses.

There have been several cases of permanent damage to the maculae observed in children and in adults who viewed these eclipses without protection of some filtering device for these rays.

Some school teachers have recommended to their students that they use old film negatives or ordinary dark glasses for viewing the solar phenomenon. It was noted that there were 14 cases of damage to the macula in Oregon and Washington in students who viewed the sun in this manner.

It is felt that physicians can render a great public service by alerting school authorities to the dangers of viewing the eclipses without proper filtering devices.

* * *

From the same News Bulletin comes an editorial stating the value of screening tests fo

glaucoma conducted under the auspices of the National Society for Prevention of Blindness.

One such detection program is in the District of Columbia. This program, to date, has screened 7,500 people using a Snellen visual acuity chart, the Harrington-Flocks Screener, and the determination of the intra-ocular tension with a tonometer. Most of the people who were screened were from local business organizations and service clubs. Approximately 20 cases of glaucoma were detected per 1,000 tests in individuals who had no family history of glaucoma, while approximately 45 people were detected to have glaucoma in individuals with a family history of glaucoma. It was felt that the results of this work were extremely worthwhile and that such projects should be stimulated throughout the country.

The results of a screening program in Phoenix were published in ARIZONA MEDICINE last year. Such a program is also contemplated for the Tucson area soon.

Since glaucoma is often a silent disease, producing no symptoms until most of the vision is destroyed, screening tests are extremely valuable in its detection. The use of a tonometer by general practitioners during the course of routine physical examination would aid greatly in the detection of this disease. It is urged that general practitioners consider the purchase of a tonometer and that they obtain some training in its use from local ophthalmologists in order to take further steps toward eradication of this disease.

A. K. Hansen, M.D.

EDITOR'S NOTES

"Medical science only tells us how to do things, not what we should do among all the things we can now do and the many more we will be able to do in the near future – and the choice as to what we do will have to be the responsibility not of the doctors and scientists but of all society, because the questions to be answered are moral questions."

Dartmouth Convocation –
Medicine's Moral Issues

* * *

" . . . The greatest difficulty in the achievement of health in the modern world will not come from learning more things and learning to handle a little better what we know but rather from all sorts of social limitations that will prevent us from applying the knowledge that we have. These social limitations cannot help bringing to the medical community extremely difficult problems of consciousness in the future . . . In 90% of the total world the problems of disease can be traced either to inadequate nutrition or to the problems of infection . . . What is needed here is an economic revolution without which medical science cannot apply what it has worked out.

" . . . One of the very great problems of medical science; namely, that one can get public support – your support – only if one can point to something in which you, today, are interested, but it is extremely difficult to enlist your support for something which is vaguely in the future.

"To what extent can we afford to prolong biological life in individuals who cannot derive either profit or pleasure from existence, and whose survival creates painful burdens for the community?

"That kind of decision is not a decision for the physician. In our society our ethics dictate that it is the duty of the physician to save and prolong life – whatever the cost, whatever the consequences. The physician must act according to the ethics of the society of which he is a part so that it will be for society to redefine these ethics."

René J. Dubos

* * *

" . . . We now live under scientific and technological rates of change which are so rapid that they completely outstrip the mutation rate. We can no longer hope that evolution will succeed in keeping man in balance with his environment."

Warren Weaver, Vice President
Alfred P. Sloan Foundation

* * *

"In medical matters it is frequently necessary to take action after the careful weighing of evidence that would not in itself constitute evidence in the legal sense, and from the present medical evidence here, the probabilities of a serious health threat for future generations are so strong that certainly it is practical wisdom to act now. But whatever environmental contamination we seek to correct in air, water or food we are

facing a problem of formidable proportions, for the contaminations are not the work of evil men, or even slovenly neighbors, as was the case 25 or 50 years ago. Instead, today's contaminations aer the impersonal reflections of a highly organized society."

Walsh McDermott

* * *

" . . . The population of the world is likely to increase to such an extent that within perhaps the time of our grandchildren the population may outrun its food supply.

" . . . Euthanasia. My own view is that this is not a fair request for society to make of the doctor, because it is the doctor's duty to save life, and I don't think he can ever take it.

"Conscience for most people, then, is simply whatever they believed when they were small children."

Sir George Pickering

* * *

"Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."

Brock Chisholm

* * *

" . . . At least one in every five persons, on the average, is encumbered by a mutant gene that arose "spontaneously," as we say, in a reproductive cell of one of his parents . . . It is obvious that unless people of the genetically least fortunate fifth of the population when saved for reproduction by the triumphs of modern medicine and other technologies reach a firm decision not to pass along their burden to prosperity, the genetic qualtiy of future generations must inevitably undergo a decline."

Herman J. Muller

* * *

" . . . I feel that we should concentrate more, first of all, on avoiding the more obvious genetic defects, preventing the more or less genetic defects from being multiplied, and in the second place on seeing what can be done with the capacity that we already have."

Aldous Huxley

* * *

"Although obviously extremely rare, the possibility that acute renal insufficiency can complicate cholecystography should be kept in mind, and patients subjected to the test should be observed for 48 hours at least. Although there is no evidence that patients with chronic renal disease are more susceptible to this complication, it seems reasonable that double doses of cholecystographic mediums should be administered in such cases with caution."

"Acute Renal Insufficiency After Ingestion of a Gall-Bladder Dye" *New England Journal of Medicine*, Vol. 264, No. 20, May 18, 1961.

* * *

The Pennsylvania Medical Society has established a joint, permanent liaison committee composed of five representatives of labor and five of medicine at the state level for the purpose of discussing problems of medical care which are of concern to both groups . . . A joint statement issued to the press by labor and medicine urging the state legislature to take full advantage of the recently enacted Kerr-Mills legislation has been issued. The common objective of both groups is to provide the highest quality medical care at prices which the laboring man can afford.

* * *

"In fact, if nothing is done to expand medical education beyond present plans, then by 1975 each doctor will have only about 5% more potential patients than he now has.

" . . . the biggest remaining threats to health and life are foolishness and old age – ailments for which there is no lasting medical cure.

" . . . I believe that a forced draft expansion of medical education might not be the best solution to the most serious problems.

"It is axiomatic that the benefit of public and philanthropic funds for social services should go to those who are most in need of better services. It is hard to justify big expenditures to expand medical education unless such expansion will improve the lot of those who now get the poorest medical care.

"The only practical way to get more doctors into the public hospitals that need them most is to give these hospitals enough money to pay competitive salaries and provide good working conditions. If we can increase our public investment in medical care, this might be a good place to begin.

"A second aspect of this problem is the regional imbalance of health facilities. Doctors, hospitals, and medical schools are concentrated in the big cities of the industrial states. In the

United States as a whole, there is one active doctor for about 850 people. In New York state there is one for every 550 people; in Washington, D.C., one for every 350. But, in many states, especially in the South, each doctor must serve about 1,400 people. Again, New York state has 10 medical schools, while 11 states have none at all.

"How to get doctors into areas where they are scarcest is one of the hardest of problems, as many small towns can testify. Building medical schools in these areas would certainly help, but it is not always possible to build a medical school where it is most needed. You cannot have a good medical school without good students, good teachers, a good university and a good general hospital. Moreover, there is no way to keep a doctor near his medical school if he doesn't want to stay there.

"Medical education shares the overwhelming financial problems of both the universities and the hospitals. Rising costs for both are largely the result of rising wages and salaries. Since both have a long way to go before they are paying at competitive rates, we can anticipate still greater increases in the costs of running universities, hosptials, and medical schools.

"It seems clear that the over-all problem of medical school finances cannot be met either by private philanthrophy or state appropriations. It is only realistic to assume that more federal aid may be necessary."

Henry Ford II

"A Businessman Looks at Medical Education"

LETTERS TO THE EDITOR

June 12, 1961

Dear Dr. Neubauer:

One of my clients called me up to read me the article you wrote about medical records. (ARIZONA MEDICINE, June, 1961) I appreciate the fact that it was in the journal and hope it will do some good. It is a subject that I hope the medical profession pursues to a satisfactory conclusion.

Sincerely,
William H. McBratney

June 15, 1961

Dear Doctor Bruwer:

Your editorial – "American Medical Association Television Program" – in the June Arizona Medicine, hit a responsive chord here!

For the past several years our Society has been "television minded" – starting with half hour programs put on in conjunction with some of the local health agencies, and progressing to full hour "spectaculars," now syndicated by the Screen Gems subsidiary of Columbia Pictures.

As a result of our San Francisco experience, the California Medical Association is now producing a series, "Doctors at Work," which shows what doctors *do*, and incidentally but surely weaves in medicine's message. One of the series, "Operation Safeguard," gave a montage of the activities conducted by medical societies for the public's benefit (including many of the thoughts expressed in your editorial), ranging from athletic injury clinics to mediation committees.

Perhaps an arrangement could be made where some of the films could be used in Arizona, with local commentators and physicians. If the AMA continues to lag in using what you so aptly termed the "medium best suited to public education in our era" perhaps our Western states can at least have our bases covered!

I would be most interested in any further thoughts you have. With congratulations on your editorial,

Sincerely,
JOHN B. SCHAUPP, M.D.

Past Chairman, San Francisco Medical Society Television & Radio Committee

Chairman, California Medical Association Television & Radio Street

---

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The Weeders, Van Gogh, Bernard Koehler Collection, Berlin

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Topics of Current Medical Interest

Clarence G. Salsbury, M. D.

To reduce the saga of Clarence G. Salsbury's seventy-five full years to an equation is an impossibility! Life presents its limitations: it covers small men, challenges great ones. Doctor Salsbury is always one to take up the gauntlet life has thrown.

The sum total of a personality represents a man's impact on life, and life's reaction to him. There are inexorable equations of destiny. Like catalysts we may alter the speed, but the crucible's ultimate residue is unchanged.

He was a native of Canada, the eldest of ten children in a farm family. He received his M.D. degree in 1913 from Boston College of Physicians and Surgeons. Following his internship and post-graduate training in New York, he and his beloved Cora left for the Orient as Medical Missionaries.

It is felt that the American Indian migrated Big was superintendent to three hospitals under the Presbyterian Missionary Board. This island is now under the rule of Red China. What an odd quirk that when he returned to the United States after thirteen years in China, that during this furlough, the Red Wave of Communism and the political maelstrom finally swept the Orient and prevented his return!

Hainan, is geographically located off the southwestern China Coast, only a couple hundred miles as the crow flies, from Laos where another sometime controversial M.D., Tom Dooley, dedicated his life and talents.

The significance of this area was pointed up by President Kennedy's Vienna conference with Chairman Khrushchev where Laos stood high on the agenda.

But if we accept the anthropolographist's theory, the Mongolian features of the Navaho were a heart-warming sight for the Salsburys. It is felt that the American Indians migrated across the Behring Strait from Asia to his ultimate habitat in North and South America. We find in Doctor Salsbury's writings the remarkable coincidence that in the Chinese culture, the Eskimo culture as well as the Navaho culture the recurrent reverence for the number four and that there are over fifty words which are identical in the Chinese and the Navaho language.

Since that first European Columbus, discovered the American Indian, they have found that the white man's successful dealings come only with patience, time and mutual respect.

In the earliest days at Ganado, he had learned too late of the young daughter of a medicine man who had fatally injured her legs. After four days of chanting and Navaho sings he rushed her to his new hospital where she died of a pulmonary embolism. This was all the provocation the Navaho Medicine Man needed for their obvious competition. These Shamans had perceptiveness and dignity. They were many in number for one out of seven of the Navaho is a Medicine Man. They were no weaklings, these Shamans were M.D.'s, Ph.D.'s, Ministrels, poets, artists, and confidants to the tribe.

They whipped together an angry mob who were prepared to lynch this first white doctor

to operate on a Navaho. Their violence was stemmed only through the intervention of the now famed Red Point, whose impassioned plea returned the angry mob to their hogans.

It is no small wonder that Red Point was made one of the first members of the Ganado Hospital staff.

A few years later at the first graduation of Navaho nurses Red Point sat on the platform. He stood out from the other speakers, sitting there in barbaric splendor! Massive silver conchos belted his purple velvet suit, his green velvet trousers topping his high deerskin moccasins. At this hospital ceremony he rose to speak, "The White Doctor Tso had much to learn when he first came here, but he is now doing good for our people. He and I do not always see eye to eye, but we consult each other."

After that pithy triumph by Red Point no one quite recalls the other speeches that first graduation day.

The gentle Navaho gave him the name Ehzay-lin Tso (Doctor Big), for should they seek his monument they need but look about them. When he left there were seventy permanent buildings on the two hundred acre campus. On one of these buildings there was a motto which is testimony to his humility, "I dressed his wounds but God healed them".

Within a year after his retirement from the Ganado Navaho Hospital he was appointed to his position as a member of the Arizona Public Health Service by Governor Howard Pyle. With Cora his bride and co-worker of fifty-one years he is retiring for the third time. Yet he is a spry seventy-five and bears watching.

Doctor Salsbury has the kind of religion that lived itself. He rolled up his sleeves, spit on his hands, and went to work. He made an impression upon those he met because he was not an imagined legend, he was from actual life. To Arizona he is rather quite what Albert Schweitzer has been to Africa. He was not a member of the cramming club in Christianity, the impact of his powerful ethical personality cannot do otherwise than frame the consciousness of this idea.

Close upon two score years ago we Arizonans accepted this then stranger. He retires from active duty a favorite son, leaving his impact upon us as a physician, pastor, father confessor, an administrator, an honest opponent, and a man with humility plus God's help.

Edwin A. Busse, M.D.

"PRIVILEGE OF THE PATIENTS' SECRETS"

"Whatever, in connection with my professional practice or not in connection with it, I see or hear, in the life of men, which ought not to be spoken abroad, I will not divulge, as reckoning that all should be kept secret . . . . ."

The patient who comes to the physician with a problem, either medical or mental, assumes that the physician will not pass onto others any disclosures made within the intimacy of the consultation room. The Hippocratic Oath quoted above clearly defines that ethical standard under which phyiscians for thousands of years have pledged to hold inviolate the patient's confidences. This relationship constitutes and assumes confidentiality and is based upon ethical and upon moral concepts.

In contrast, although not in contradiction, the privileged communication is a right under law, defined and established by statute. When privilege exists it is a legal right which belongs to the patient whereby the doctor may not disclose or be forced to disclose those confidences needed for an adequate diagnosis and therapy or reveal the nature of the therapy.

In some jurisdictions the patient does not possess the right of privilege. In an adjacent jurisdiction the patient may be fully protected by law from any and all disclosures by his personal physician.

The fact that a patient assumes a relationship of confidentiality demands that the physician, general practitioner or specialist, know both his ethical obligation as well as his legal responsibility.

Psychiatric treatment is of such a specialized character that confidentiality becomes a requisite toward a successful goal in therapy. Privilege has been challenged on the grounds that it may obstruct justice by withholding evidence. In order to serve the community effectively many psychiatrists are of the opinion that the social value which effective psychiatric treatment has for the community far outweighs the potential loss of evidence resulting from the withholding of testimony by a psychiatrist about his patient.

A model statute demarking the privileged re-

lationship between the patient and his psychiatrist has been proposed and reads as follows:

"The confidential relationship and communication between psychiatrist and patient shall be placed on the same basis as regards privilege, as provided by law between attorney and client".

The relationship between the attorney and his client is one of en toto privileged confidential communication.

For the best interest of the psychiatric patient and for a more effective psychiatric therapy, the relationship of the physician and patient should be revised and placed upon a similar basis of an en toto confidential communication by statute.

Maier I. Tuchler, M.D.

WHAT KIND OF MEMORIAL FOR TOM DOOLEY?

Tom Dooley was honored in June of 1960 at a dinner which was held in New York City. Remarks made by the Hon. Khamchan Pradith, the former Chargé d'Affaires of the Embassy of Laos, at that testimonial dinner are significant: "To the four corners of the Kingdom of Laos and beyond its frontiers, the name of Dr. Thomas A. Dooley has become well known to everybody. He is, for our generation, the symbol of enthusiasm, compassion, and sacrifice. We love him because he lives our life, he eats our food, he cures our sick people, he suffers what we are suffering. In the eyes of our people from all walks of life, this wonderful American is truly great."

Compare this image of an American with that described by Fr. Dunne, S.J., in the May 13, 1961, issue of *America*. (He in turn credits *Time* of 8/8/60 with the original quotation given below.) Fr. Dunne notes that the average American is puzzled by all the Anti-Americanism prevalent in the world today. In an attempt to explain to Americans why we are so unpopular, Fr. Dunne says: "Consider an American bean grower who is fighting efforts to provide a minimum of schooling for the children of migrant farm workers who uses as full-fledged field hands children only nine years of age, children doomed by illiteracy to dreary servitude for life. Says the bean grower (from *Time* of 8-8-60): 'When a migrant goes to school beyond the seventh grade, you've runined a good bean picker.'

(Still quoting Fr. Dunne:) "There are perhaps no people more generous with their wealth than Americans but the image which impinges itself upon the world consciousness is not one of American largesse. It is rather the image of the calculating and unfeeling bean grower... It is not the exceptional Tom Dooley, but the hard-nosed bean grower who appears to be the normal product and expression of the social and economic system which has reached its highest development in America. This, as much as anything else, is what 'colonialism' and 'imperialism' mean to downtrodden people everywhere. This is why there is so much anti-Americanism about."

Return again to the more pleasing image of an American, that of the late Tom Dooley. Tom is well remembered for the work he performed in Laos. Less well known is the fact that he was also co-founder of MEDICO, a deed which may prove to have more lasting and far-reaching effects than the work in Laos. Tom's partner in establishing MEDICO (Medical International Cooperation Organization) was Peter D. Comanduras, M.D., from 1950-1958 Associate Professor of Medicine at George Washington University Medical School, and now Secretary-General of the organization he helped to found.

Dr. Comanduras, together with Malcolm Dooley, Tom's brother is carrying on the work of MEDICO. Arthur M. Godfrey is acting General Chairman of the "Dr. Tom Dooley Tribute Fund for Medico." a group whose goal is to raise one million dollars through private sources for MEDICO. Honorary Co-Chairmen of this fund are Pres. John F. Kennedy and the Hon. Dwight D. Eisenhower. The money will be used to continue and expand current projects, and start new programs in countries which seek such assistance. It is well worth emphasizing that MEDICO does not establish its hospital-clinics in any country until it has been invited to do so by the host government. As of March 13, 1961, 20 governments had asked for MEDICO assistance to alleviate appalling health conditions among their populations.

On May 2, Dr. Comanduras addressed the Phoenix Executives Club. He described vividly

the conditions in countries where MEDICO is now at work and in others where MEDICO is needed. He showed how Americans can help through MEDICO to solve a part of the problem in these countries undergoing a "Revolution of Rising Expectations."

Significantly, Dr. Comanduras did not make an appeal for funds at that dinner. He depicted the situation and left the action up to the audience. He concluded with an appeal for people rather than money. Althongh Dr. Comanduras did not say it, it is abundantly clear that from those who cannot contribute their services until later, money is needed as a substitute now.

MEDICO is an outfit to whose aims almost every one of us can subscribe. It aids the sick in the developing countries. It shows these people how they can become medically self-sufficient. It shows them that Americans care. It is not affiliated with any religious or political organization. It has no affiliation with any branch of the U. S. Government.

MEDICO provides an answer for those people who are wondering how they can help America today. While it does not solve directly the problem posed by the American bean grower, it does place an obligation upon us to meet his challenge. Otherwise, MEDICO's image of the generous, compassionate American will be a false one, doomed to ultimate failure. But if we resolve to eliminate these vestiges of colonialism and imperialism persisting within our borders, we can with a clear conscience undertake the assignment of changing our image abroad. And certainly there is presently no better means of effecting this change than through Tom Dooley's organization.

It would be a real tribute to Tom if the medical profession would assume an active role of leadership in this matter of educating our underprivileged brothers. As Dr. Comanduras says, "If every man could mend a man, then the whole world would be mended." And in doing this we would show again that we can act effectively and affirmatively in an area where that kind of action is urgently needed.

Tom Dooley has told us how to show people in developing countries that Americans care about them. He has demonstrated by personal example that the method is effective. Let it be our personal tribute to his memory that we heed Tom's message.

Wallace A. Reed, M. D.

Contributions can be sent to:
Mr. Arthur M. Godfrey, Chairman
Dr. Tom Dooley Tribute Fund for MEDICO
420 Lexington Avenue
New York 17, N. Y.

ANNUAL MEETING OF THE ARIZONA PUBLIC HEALTH ASSOCIATION — 1961

Some 150 members of this Association assembled at the Grand Canyon, South Rim, for the annual meeting held from May 17th to 19th. The theme for the meeting was METROPOLITANISM - A NEW FRONTIER IN ARIZONA.

Special guests and speakers at the conference were Dr. Berwyn F. Mattison, Executive Director of the American Public Health Association, New York City; Dr. James K. Shafer, Chief, Division of Community Health Pratice, USPHS, Washington, D. C.; Senator Glenn Blansett, Navajo County; Senator J. M. Richards, Navajo County; Mr. Roy Young, Assistant General Manager, Kennecott Copper Co., Hayden; Mr. Sam Maxcy, Executive Secretary, Maricopa County Farm Bureau; Mr. S. E. Morris, Administrator, Good Samaritan Hospital, Phoenix; Mr. Charles Pine, Valley National Bank, Phoenix; Mr. Milton Gan, of the Phoenix Community Council; Mr. J. J. DeBolske, of the League of Arizona Cities and Towns; Miss Charlotte Buchen, of the *Arizona Republic*; Mr. Sylvain Schnaittacher, of the International Union of Mine, Mill and Smelter Workers; and Mr. Marshall B. Willis, of the El Paso Natural Gas Company; Mrs. Beatrice Evans, R.N., of Flagstaff; and Mr. E. S. Edmonson; Director of Welfare, Nogales.

Dr. Shafer in the keynote address called attention to the rapidly increasing urbanization in the U.S.A. By 1900, the country had only four metropolitan cities containing more than one million inhabitants and only 21 per cent of the population lived in urban communities. By 1950, there were no less than 14 metropolitan areas of more than a million people. By the year 2000, it is forecast the United States may have 320 million

people, and one- third of these will live in ten super-metropolitan areas. At that time some 85 per cent of the population will be urban.

Haphazard growth has meant poor community development and many difficult problems. Public Health leaders must participate more in planning many aspects of metropolitan growth, such as water supply, sewage disposal, medical care facilities, milk supply and many others.

Most of the program consisted of panel discussions on such topics as the role of Industry, Management and Labor in Public Health. A considerable discussion centered around air pollution. Senator Blansett defended stoutly his vote in the resent legislature against the air pollution bill.

Another vigorous discussion arose over the varied aspects of medical care for the indigent. The costs of this program is giving concern in all counties. It is obvious that health workers must be more concerned in this community problem.

At the annual banquet of the Association special Certificates of Honor were presented to Dr. Clarence G. Salsbury, retiring Commissioner of Health of Arizona, and to Dr. Esther M. Closson, retiring Director of the Pima County Health Department.

Mr. George W. Marx, of the State Health Department, presided over the conference. The incoming President of the Association is Dr. Hugh H. Smith, of Tucson. Dr. S. F. Farnsworth, Director of Maricopa Health Department, is the President-Elect. The next annual meeting of the Association is to be in Tucson in May, 1962.

Hugh H. Smith, M.D., M.P.H.

BLOOD BANKING

Additional warning against the use of the single transfusion is made again in a recent brochure FACTS ABOUT BLOOD BANKING, published by the American Association of Blood Banks. "Good transfusion practice underscores the importance of the 'controlled blood program' in which transfusion therapy is used only in cases of obvious need. The use of a single transfusion merely to speed recuperation is not encouraged."

The American Association of Blood Banks, organized in 1947, is the national group representing hospital and community blood banks and transfusion services in the United States. These centers are supplying about 52% of the 5,500,000 units of blood that are used annually in this country, with the American Red Cross furnishing about 48%. A reciprocity agreement between the AABB and the Red Cross provides for a nationwide exchange of donor replacement credits between AABB member banks and ARC regional blood centers.

The pamphlet points out that American Association of Blood Banks members operate on the principle that blood transfusions are an individual patient responsibility, with family or friends making donations to replace the blood used. The ARC program has as its premise that providing blood is primarily a community responsibility and their blood collection activity is financed by public contributions and a service charge for each unit of blood, encouraging volunteer donations as a source of transfusions.

"The new dimensions of today's need for blood," the booklet states, "have far outstripped the amount procurable through any single agency."

Allan B. Carter, M.D.

AMA — PR MANUALS

A new working manual for medical societies in the field of aging, "Unlock Your Community Resources," is set for distribution. Emphasizing the non-legislative, community service approach to the problems of aging, this manual gives specific recommendations on how to set up a sound community-wide program in the field of aging.

Following is a list of other new PR pamphlets and booklets designed to further good doctor-patient relations, which are again available in quantity from AMA's Special Services Department. Most of them are recommended for distribution to patients.

"To All My Patients" – 12-page pamphlet designed to give patients a better understanding of various aspects of medical care.

"Winning Ways With Patients," – 24-page manual on the human and business side of medi-

al practice, designed for the doctor's receptionist, nurse and secretary.

"Do You Like To Make Decisions?," – give-away leaflet discussing the importance of good doctor-patient relationship.

"The Fifth Freedom," – give-away leaflet stressing the value of the close relationship existing between doctor and patient when the patient can choose his own family doctor.

"Why Wait?," – give-away leaflet urging everyone to have a personal family doctor and not to wait until illness strikes before acquiring one.

"What Everyone Should Know About Doctors," – 16-page booklet outlining the extent of a doctor's education, routine examinations of patients, winding up with a plea for everyone to find a family doctor. Limited quantities available but designed for patients.

"To All My Patients" (plaque), for sale at one dollar, postage paid, through the AMA Order Department. Urges patients to feel free to ask their doctor any questions about his services or fees. For display on wall or desk.

"Rx – A Prescription for Growth," – AMA's new membership brochure calling for physicians to take an active interest in their national organization and the issues facing the profession today. Also listed are many of the AMA's services for both profession and public, and its new 10-point action program for 1961.

BLUE CROSS — BLUE SHIELD

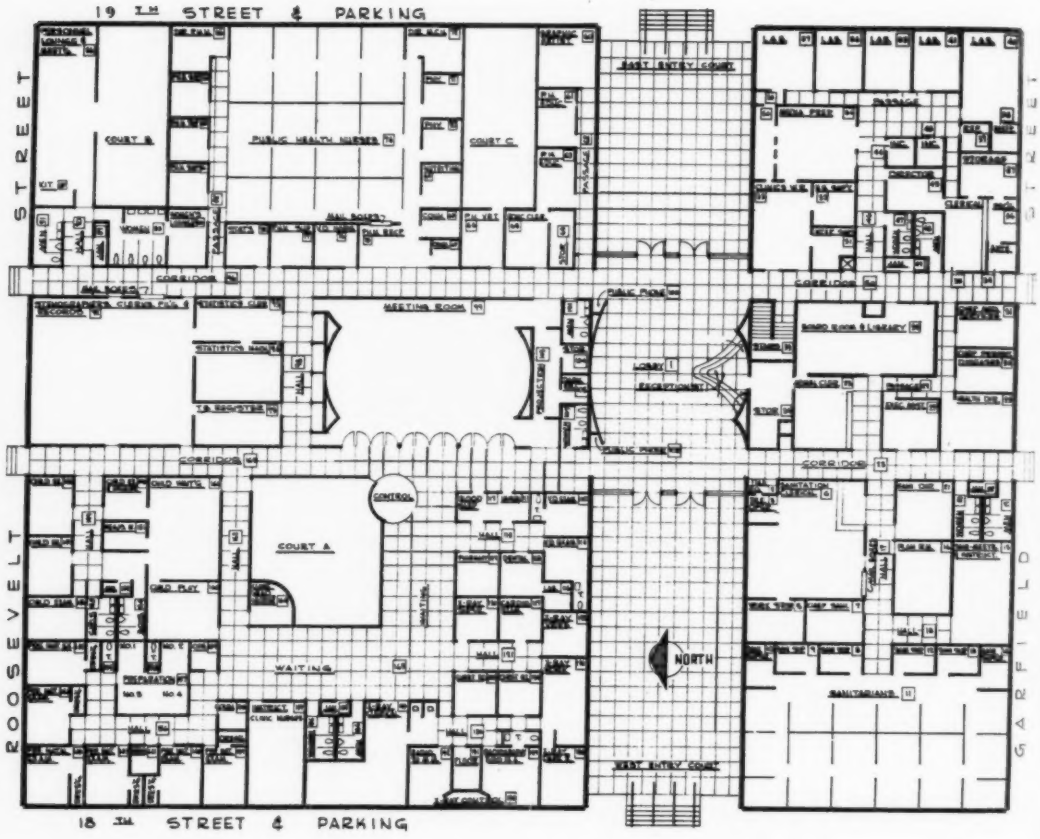
The medical profession in 1960 received more than $731,000,000 from the 74 nationwide Blue Shield Plans for care rendered members, the National Association of Blue Shield Plans reported.

"The $731,131,187 paid to physicians represented an all-time high for a one-year period, and also represented nearly 90 per cent of the total 1960 income of these medical-surgical plans," L. Donald Lau, executive director of the Arizona Plan, stated. At the same time, the Blue Shield Plans devoted less than 10 per cent of their total 1960 income to administrative expenses.

In its report, the national association indicated that Blue Shield payments to the medical profession had increased from nearly $116,000,000 in 1950 to the 1960 figure of $731,131,187.

"The impressive increase in payments to the medical profession over the years on behalf of Blue Shield members clearly reflects the ability of these medical-surgical Plans to develop realistic and flexible programs in order to keep pace with the tremendous advances in our medical care system," Lau added. "At the same time," Lau concluded, "our Plans have annually expended a lesser percentage of their income dollar to administrative expenses in the face of spiralling inflation and the commensurate cost of doing business."

The new Maricopa County Health Department building.



THE NEW MARICOPA COUNTY HEALTH DEPARTMENT BUILDING

Recently, a young visitor touring the new Maricopa County Health Department, exclaimed, "Boy, it looks like a million dollars." It does — and it is. The total cost of the land, building, and equipment was $1,018,885.

Situated on a 3½ acre lot, the building is one story, with one-half basement, and has 40,000 square feet of floor space. It is supported essentially by exterior columns with no weight bearing walls, which allows for maximum flexibility. Many cabinets, shelves, and desks are built in, not only adding to beauty of design, but to space conservation and economy.

The exterior of the building is unusual and striking with the windowless, patterned concrete walls and steel supporting columns. In spite of the absence of exterior windows, there is a comfortable feeling of light and spaciousness inside due to enclosed courts, indirect lighting, and complete central air conditioning.

In addition to complete administrative, clinic, and x-ray facilities, the building houses an all new laboratory which has enabled the department to increase and expand its services by doing routine serology, bacteriology, and other tests in the fields of water, milk, tuberculosis, and other communicable diseases.

Headquarters for 165 public health workers, this building brought the county health department staff together for the first time. After the

A free form reception desk in the lobby offers easy access to the visitor as he approaches from either the east or west entrance.

merger of the City and County Health Departments in 1957, space in the main office was inadequate, forcing the staff to be split up into two buildings some distance apart. Neither provided even minimum desirable public health facilities. The new building provides the facilities essential to conducting a good public health program.

CHLORDIAZEPOXIDE (LIBRIUM) POISONING

Chlordiazepoxide (Librium) is one of the newer psychopharmacologic agents. Recently a number of poisonings involving massive doses of this drug have been reported in the literature (1, 2). One report(1) concerned two cases of unsuccessful suicidal attempts with chlordiazepoxide. One of the victims was a 44-year-old white female who ingested 875 mg of the compound in one dose. She did not inform anyone of her action until the following day. She noted no ill effects except for ataxia and dysarthria which abated within 48 hours. The other patient, a 22-year-old white male with schizophrenia, consumed 1,630 mg of the drug in a 24 hour period. He displayed only ataxia and drowsiness and he was given coffee as the sole therapeutic measure. Apparent recovery occurred within 24 hours. Gastric lavage was not performed in either of the above patients, since many hours had passed between the time of the ingestion of the drug and the discovery of the incident.

Another clinical report(2) presents the case history of a 47-year-old female (diagnosed as paranoid schizophrenia) who intentionally ingested 1,150 mg of chlordiazepoxide in a period of 20 minutes. The overdose was followed by

drowsiness and the patient fell asleep. Six hours later she awoke and performed household duties despite an unsteady gait, thickening of speech, and dysarthria. These symptoms became intensified following ingestion of whiskey. No treatment was given, since the suicidal attempt was not discovered until 45 hours after the incident. The patient recovered with no evidence of permanent damage.

These case reports, although limited in number, would tend to indicate that chlordiazepoxide is less toxic than many of the other tranquilizer drugs which have been reported to produce severe extrapyramidal symptoms, central nervous system depression and hypotension following overdose(3,4,5).

The reports of these acute poisonings from the drug chlordiazepoxide should prove useful in the management of future poisonings following overdose as well as accidental ingestion of the drug by children.

HYPOGLYCEMIA – A RESULT OF ALCOHOL POISONING IN CHILDREN

Although acute ethanol poisoning in children is infrequent, it seems important to call attention to Cummins' recent clinical report(6) on the subject because of a little known aspect of alcohol poisoning, hypoglycemia. Cummins described two cases in which small children ingested alcoholic fluids. The first case involves a 6-year-old Negro boy who ingested an unknown quantity of gin. The patient became comatose and was in a state of constant convulsions. Amobarbital was administered in an attempt to control the seizures. Approximately 11½ hours following ingestion of the gin, the blood alcohol level was 20 mg per cent and the blood sugar level was only 15 mg per cent. Following intravenous injection of 50 ml of a 50% glucose solution, there was a marked decrease in convulsive activity. However, infrequent focal seizures, mainly involving the right arm and face, continued and additional amobarbital was given intravenously to control the seizures. Temperature, blood pressure, pulse, and respiration remained normal but the patient continued to be deeply comatose. Approximately 19½ hours after poisoning, the patient suddenly developed respiratory and cardiocascular failure. Despite measures to maintain respiration and blood pressure, the patient died approximately 36 hours after poisoning.

The second case involved a 3-year-old Negro girl who ingested approximately 20 ml of cologne (85% denatured alcohol). This patient also became comatose and subsequently exhibited convulsions. Her blood sugar level, taken immediately after the first bout of seizures, was 22.5 mg per cent. During a second bout of convulsions she was given intravenously 10 ml of 50% glucose solution and 5 ml of calcium gluconate solution, whereupon all convulsive movements were terminated. Because the child was somewhat acidotic, she was also given M/6 sodium lactate and 10% glucose by intravenous drip. She recovered and was discharged from the hospital three days after poisoning.

It is highly doubtful that central depressants have a place in the treatment of acute alcohol poisoning because of the danger of synergism and, consequently, added depression. However, the above case reports do suggest severe hypoglycemia as a possible feature of alcohol poisoning and indicate the need for blood glucose determinations and, possibly, the need for glucose therapy in the treatment of acute ethanol poisoning.

STATISTICS OF 63 POISONING CASES IN ARIZONA REPORTED DURING APRIL 1961

AGE:

73.0% involved under 5 year age group	(46)
1.6% involved 6 to 15 year age group	(1)
14.2% involved 16 to 30 year age group	(9)
4.8% involved 31 to 45 year age group	(3)
4.8% involved over 45 year age group	(3)
1.6% were not reported	(1)

NATURE OF INCIDENT:

76.2% accidental	(48)
17.5% intentional	(11)
6.3% other	(4)

TIME OF DAY:

38.1% occurred between 6 a.m. and noon	(24)
34.9% occurred between noon and 6 p.m.	(22)
15.9% occurred between 6 p.m. and midnight	(10)
1.6% occurred between midnight and 6 a.m.	(1)
9.5% were not reported	(6)

OUTCOME:

98.4% recovery	(62)
1.6% fatal	(1)

CAUSATIVE AGENTS:

Internal Medicines	Number	Percent
Aspirin	11	16.2
Other Analgesics	1	1.5
Barbiturates	2	2.9
Antihistamines	1	1.5
Laxatives	0	0.0
Cough Medicine	2	2.9
Tranquilizers	4	5.9
Others	8	11.8
Subtotal	29	42.7

External Medicines		
Liniment	1	1.5
Antiseptics	0	0.0
Others	3	4.4
Subtotal	4	5.9
Household Preparations		
Soaps, Detergents, etc.	1	1.5
Disinfectants	0	0.0
Bleach	3	4.4
Lye, corrosives, drain cleaners	1	1.5
Furniture and floor polish	1	1.5
Subtotal	6	8.9
Petroleum Distillates		
Kerosene	3	4.4
Gasoline	4	5.9
Others	2	2.9
Subtotal	9	13.2
Cosmetics	4	5.9
Pesticides		
Insecticides	2	2.9
Rodenticides	0	0.0
Others	0	0.0
Subtotal	2	2.9
Paints, Varnishes, Solvents, etc.	7	10.3
Plants	0	0.0
Miscellaneous	5	7.3
Unspecified	2	2.9
TOTAL	68*	100.0

*The total number of causative agents exceeds the actual number of poisoning cases since in certain individual poisoning incidents more than one agent was involved.

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BOARD OF MEDICAL EXAMINERS STATE OF ARIZONA

The Board of Medical Examiners of the State of Arizona at a regular meeting held Saturday, April 15, 1961, issued certificates to practice medicine and surgery in this State to the following doctors of medicine:

BEST, Joseph Warren (GP), Div. 9126, USNTC, San Diego 33, California. BEZMAN, Harry S. (GP), 507 Second, Traer, Iowa. BIVINGS, Frank Gary (S), Ellis Fischel State Cancer Hosp., Columbia, Missouri.

BLANKENSHIP, John Frank (GP), 119 W. McDowell Road, Scottsdale, Arizona. BOAS, Richard Nils (Pd), 316 Knoedler Road, Pittsburgh, Pennsylvania. BOUTSELIS, John George (ObG), 926 E. McDowell Road, Phoenix, Arizona. BROWN, Lee Buckingham (GS-TS), 1130 E. McDowell Road, Phoenix, Arizona.

CHAKER, Henry (GP-Pd), 2634 Yorba Street, San Francisco, California.

DALY, David DeRouen (N), 550 West Thomas Road, Phoenix, Arizona. DONOVAN, Raymond Flowers (GS), 108 N. 4th Street, Watseka, Illinois.

EMORY, Walter Kent (GP), 6838 N. 23rd Avenue, Phoenix, Arizona. ERICKSON, Alfonso Howard (Anes), 5802 West Camelback Road, Phoenix, Arizona.

FETTER, Mary (Path), 10042 North 7th Place, Phoenix, Arizona. FOSTER, Robert Francis (I-Ca), 1538 Medical Dental Building, Seattle, Wash. FRIEDLAENDER, Alex Seymour (A), 10300 W. Seven Mile Road, Detroit, Michigan. FRIEDMAN, Glenn Martin (Pd), 5716 Academy Street, Tucson, Arizona.

GREEN, Joseph Martin (Child Psychiatry), 801 South Prudence Road, Tucson, Arizona.

HARRIS, Jr., Clifford John (I), Modesto State Hospital, Modesto, California. HARRIS, Keith Harvey (GS), 550 West Thomas Road, Phoenix, Arizona. HAWLICK, Garfield Francis (Pd-GP), 3410 St. Clair, Pueblo, Colorado. HOLIFIELD, Jack Rodney (GP), 227 Church, Tiptonville, Tennessee. HOLMSTRAND, Kaj Erik Henry (PlS), 1503 Carew Tower, Cincinnati, Ohio.

JOHNS, Robert Franklyn (ObG), 454 Greenbriar Lane, Dallas, Texas. JOHNSON, Robert Adair (Or), 2620 North Third St., Phoenix,

Arizona. JOHNSTON, Richard Charles (GP), 2730 Zuni, Glendale, Arizona. JOSEPH, Samuel Richard (GS), 215 Alandale Place, Tucson, Arizona. JURGENSEN, William Walter (R), 617 Medical Arts Building, Omaha, Nebraska.

KABINS, Sherwin Allan (I), 3619 Zuni, Glendale, Arizona. KELSEY, Lawrence Edmond (GP), 102 W. Keim Drive, Phoenix, Arizona. KENNIKER, Eldine Loraine (ObG), 1514 Anacapa, Santa Barbara, California.

LIVINGSTON, Harry Hannan (S-TS), 800 McKinley Avenue, Canton, Ohio. McCOMBS, Rollin Koenig (I), 1802 Tulane Avenue, Long Beach, California. MALLOW, Harvey Gustave Emil (GS-GP), 210 Madison Avenue, Fort Atkinson, Wisconsin. MARTIN, Homer Delmar (GP), 24 Randolph Avenue, Elkins, West Virginia. MERRITT, Edward George (GP), 507 Main Street, Dolores, Colorado. MORACA, Patrick Pasqualino (Anes), 1313 North Second Street, Phoenix, Arizona. MORLEY, Buel (ObG), 636 Church Street, Evanston, Illinois. MOTTER, George Namen (R), 119 W. McDowell Road, Scottsdale, Arizona.

NELSON, Robert Lee (ObG), Scottsdale Medical Center, Scottsdale, Arizona. NENAD, Robert Eugene (I), 2021 North Central Avenue, Phoenix, Arizona.

OBLEY, Fred Allen (GP), 329 Fourth Street, Ellwood City, Pennsylvania. O'LEARY, Francis Bernard (GP), Sibley, Iowa.

PAUL, William Diamond (I), 1430 Cottingham Court, Columbus, Ohio.

RIGG, Jr., James Paul (Oalr-GP), 521 Rood Avenue, Grand Junction, Colorado. RIPLEY, Loyd Gale (GP), 2805 Sioux, Glendale, Arizona. RUDERSDORF, Howard Edward (GP), 305 Toy National Bank Bldg., Sioux City, Ia.. RUNFOLA, Anthony Vincent (GP), 63 West Quaker, Orchard Park, New York.

SHIRER, Jr., Benjamin Franklin (GP), 6 West Wilson, Batavia, Illinois. SIERAKOWSKI, Frances (GP), 4752 E. Indian School Rd., Phoenix, Arizona. SMILEY, Leonard Victor (U), 960 Grand Concourse, New York, New York. SMITH, Harry Charles (GP), 610 Ninth Street, Douglas, Arizona. STEELE, Clarence Hart (ALR), 765 Brotherhood Bldg., Kansas City, Kansas. STEWART, William Floyd (GP), 8 North Main Street, Rittman, Ohio. SUSONG, William Anderson (ObG), 1033 E. McDowell Road, Phoenix, Arizona.

TENNANT, Rose (Path), St. Joseph's Hospital, Phoenix, Arizona.

VALLE, William (Guglielmo) GP-ObG), 1318 West Moreland, Phoenix, Arizona. VAN ANTWERP, Jr., James Dillier (P), 38th and Rainbow, Kansas City, Missouri. VOGT, Anne Marie Stupnicki (GP), 2405 East Fillmore, Phoenix, Arizona.

WALSKE, Benedict Raymond (S-TS), VA Hospital, Greenway Station, Tucson, Ariz. WEBB, Dale Fleming (S), 645 Seventh Avenue, Yuma, Arizona.

ARTIFICIAL INSEMINATION

"The Roman Catholic Church is against it. The two other major faiths are for it. Organized medicine is officially noncommital. And the law just is not there."

(Medicolegal Digest)

LAUNCHING OF NEW DRUG FIRM

One of the features of the recent June American Medical Association Meeting in New York was that it served as a launching pad for the orbiting of a new drug manufacturing enterprise. This was the introduction of Philips Roxane, Inc., to the American pharmaceutical industry. The AMA considered it something of a precedent that a company chose this annual conclave to make its initial bow to the medical profession.

By keeping its presentation purely institutional and in a setting of a Dutch garden, symbolic of its origins, the company was able to introduce itself on a broad platform especially suited to informing the profession of its complex set-up. Philips Roxane rises out of a vast network of technological operations here and abroad from which its extensive plans for pharmaceutical research and development have been drawn. In the background are a number of corporate operations with worldwide recognition and resources. Chief among these is the Philips Electronics and Pharmaceutical Industries Corp. and N. V. Philips-Duphar of The Netherlands. The diversified electronic, pharmaceutical, and chemical output of these operations have international distribution. Philips-Duphar has gained recognition in other areas of human medicine, in animal and plant pharmaceuticals. Currently being developed are studies in organic synthesis and radioactive isotopes.

In completing its plans for full-scale operation, Philips Roxane has just erected a plant at its headquarters location in St. Joseph, Missouri. Among its present pharmaceutical projects is the development of a measles vaccine, now in extensive clinical trial, and for which patent applications have been filed.

(From News Release, Columbia Pharmacal Co.
Affiliate of Philpis Roxane, Inc., Columbus 16, Ohio)

See Advertisement Page 33A

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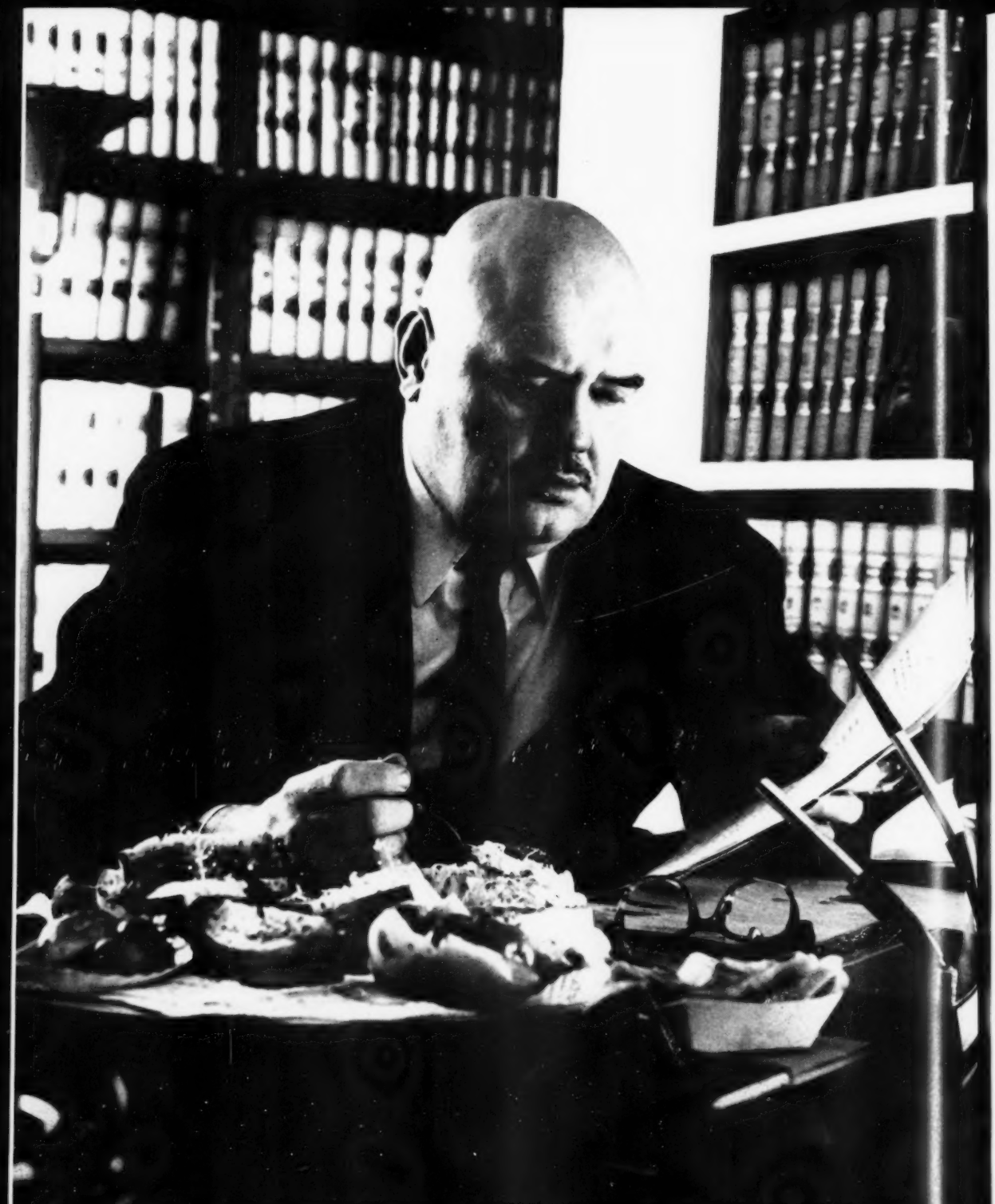

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No patient developed voracious appetite on triamcinolone. Preferable for the overweight person whose appetite is undesirably stimulated by other steroids. (Freyberg, R. H.; Berntsen, C. A., Jr., and Hellman, L.: *Arthritis & Rheumatism* 1:215 [June] 1958.)

SPECIAL PROBLEM: EDEMA

Since it does not produce edema, triamcinolone is useful in rheumatoid arthritis patients with cardiac decompensation who need steroid therapy. (Hollander, J. L.: *J.A.M.A.* 172:306 [Jan. 23] 1960.)

SPECIAL PROBLEM: HYPERTENSION

Triamcinolone may be included among the currently available antirheumatic steroids having the least tendency to cause sodium retention. (Ward, L. E.: *J.A.M.A.* 170:1318 [July 11] 1959.)

Hypertension did not result from triamcinolone therapy. Existing hypertension was reduced sometimes. This may have been due to lack of sodium retention. (Freyberg, R. H.; Berntsen, C. A., Jr., and Hellman, L.: *Arthritis & Rheumatism* 1:215 [June] 1958.)

Precautions: Collateral hormonal effects generally associated with corticosteroids may be induced. These include Cushingoid manifestations and muscle weakness. However, sodium and potassium retention, edema, weight gain, psychic aberration and hypertension are exceedingly rare. In the treatment of rheumatoid arthritis, dosage should be individualized and kept at the lowest level needed to control symptoms. Dosage should not exceed 36 mg. daily without potassium supplementation. Drug should not be withdrawn abruptly. Contraindicated in herpes simplex and chicken pox.

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Reprints

Plague Remains Modern Hazard

Vigilance against plague must not be relaxed, despite modern advances in fighting the disease, Dr. Karl Friederich Meyer of the University of California cautioned in his acceptance speech at the University of Chicago, where he received the Howard Taylor Ricketts Memorial Award for 1960 on June 6.

"What in 1928 was thought to be a localized epizootic entity in California," he said, "is now known to extend through 131 counties in 15 western States, an area comprising 40 percent of the continental United States from the Pacific Coast to the 100th meridan.

"During the period 1908-51, 98 cases (60 deaths) in eight western States have been contracted from wild rodents. There is every reason to predict that in that area, sporadic cases of bubonic plague may make an annual appearance."

Dr. Meyer, who is director emeritus of the George Williams Hooper Foundation for Medical Research and professor emeritus of experimental pathology at the University of California, attributed the special vulnerability in that State to the booming population. Although the building of suburbs will keep away appreciable wild rodent populations, he said, "There is an initial period of joint tenancy by people and wild and commensal rodents — a condition theoretically ideal for the propagation of plague."

Wholesale destruction of the diseased rodent population is not always possible as a preventive measure, owing to geographic and financial considerations, Dr. Meyer added.

Long thought transmissible only through rat fleas, plague is now known to spread through exchange of fleas of many wild rodents and other small animals, including ground squirrels, wood rats, chipmunks, prairie dogs, and field mice, according to Dr. Meyer.

Dr. Meyer traced the course of the plague in the United States since it was first diagnosed in a human in 1900 and in rats in 1902.

Plague reservoirs of rodents exist in South Africa, East Africa, Iran, and the Soviet Union. Soviet health workers have eliminated the danger on the fringes of their vast wild rodent area, but fear that plague may break out again or be reimported, Dr. Meyer said.

The sulfa drugs and the antibiotics have proved effective in treatment, allaying some of the panic caused by the appearance of human plague. Plague vaccines have been developed, but a dependable immunity cannot be achieved with a single injection, he added.

"Active immunization in the face of or during an epidemic is of little or no value, but a persistent long range vaccination program could serve as a supportive preventive measure." Modern chemotherapy is more effective in the vaccinated, Dr. Meyer believes.

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CURRENT STATES OF SYPHILIS IN THE UNITED STATES

William J. Brown, M.D.
Chief, Venereal Disease Branch
Communicable Disease Center
Public Health Service

Syphilis remains a public health problem of major and increasing proportions.

A total of 120,000 cases were reported among civilians alone in 1959, of which 8,200 were in the early infectious stages.

Reported cases of infectious syphilis have been increasingly alarming since 1957. Moreover, there is no indication that the trend is changing

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Almost 42 percent more infectious syphilis was reported from July to December of 1959 than was reported during the same 6 months of the previous year. We estimate the reservoir of untreated syphilitics today at 1,200,000 cases and that the true annual incidence is 60,000 cases.

Already, the cost of 33,000 paretics in tax-supported mental institutions is $48 million a year. And if we do not find and treat the 1¼ million untreated, we may expect an additional 178,000 to develop late disabling manifestations. This will include 52,800 more cases of paresis and meningovascular syphilis requiring about 530,000 years of hospitalization at a cost of almost a billion dollars. It will also include 23,000 cases of tabes, 6,000 of optic atrophy, and 91,000 of cardiovascular syphilis.

Clearly, at this point syphilis is not under control. This is not to say that we have not made progress against syphilis in this country, because we have. For example, deaths from syphilis have dropped from 14,000 to 4,000 a year, and infant deaths due to syphilis have dropped from 574 to fewer than 1 per 100,000 live births.

Fortunately, syphilis, for several reasons, is not spreading in geometrical progression, but it does seem to be spreading faster than we can find and treat it. A variety of factors, such as environment, economics, and social structure, may influence the spread of syphilis in a population. Some syphilitics, for example, do not have opportunity for further intercourse while they are infected. Moreover, syphilis is not contracted at every exposure to infection. And also, some chains of infection and chains of contact double back on themselves in large part and are contained within certain social groups.

Venereal disease control always has depended upon research to develop techniques of diagnosis and treatment, and upon a vigorous case finding program to find infected persons and bring them to treatment faster than infection could spread. I believe that the late Dr. Joseph Earl Moore, in paraphrasing Frost on tuberculosis, was correct when he said, ". . . it is not necessary that transmission be immediately and completely prevented. If, in successive periods of time, the number of infectious hosts is continuously reduced, the end result . . . if continued long enough, must be the extermination of the treponeme of syphilis."

Today, techniques of both diagnosis and treatment have been developed almost to the ultimate. Epidemiology, however, has lagged behind, particularly among patients of private physicians. Consequently, a large part of our national program is now being oriented to the development of working relationships between public health and the private practitioner.

We have had some measure of success in persuading private physicians to report their cases and to have them interviewed by a trained epidemiologist. The Pennsylvania program is a good example. Reporting by private physicians in Pennsylvania increased more than 10 times from 1958 through 1959.

In 1958, the Louisiana State Health Department began to stimulate reporting among private physicians through personal visits, talks at medical society meetings, and followup of reactive serologies from public and private laboratories and hospitals. In two corresponding 9-month periods, cases of primary and secondary syphilis reported by private physicians rose from 0 to 58. During the same two periods, early latent cases reported by private physicians increased from 3 to 417.

Kansas is another typical example of improved interviewing among primary and secondary syphilis patients of private physicians. Morbidity reporting of early lesion syphilis treated by private physicians in Kansas rose from 11 cases in 1958 to 50 cases in 1959. Further, the number of privately treated patients with primary and secondary syphilis who were interviewed during the same period increased from 8 to 38. As a result, contacts of private physicians' patients who were interviewed increased from 43, in which there were no cases of infectious syphilis, to 147, which included 14 with primary and secondary syphilis.

Overall improvement has been made in interviewing privately treated primary and secondary syphilis patients across the country. In the 5-year period ending in 1958, an average of 17 percent of these patients were interviewed per year by a trained interviewer. During 1959, this percentage was still increasing. Forty-nine percent of all patients with infectious syphilis reported by private physicians were interviewed for sex contacts by a trained interviewer.

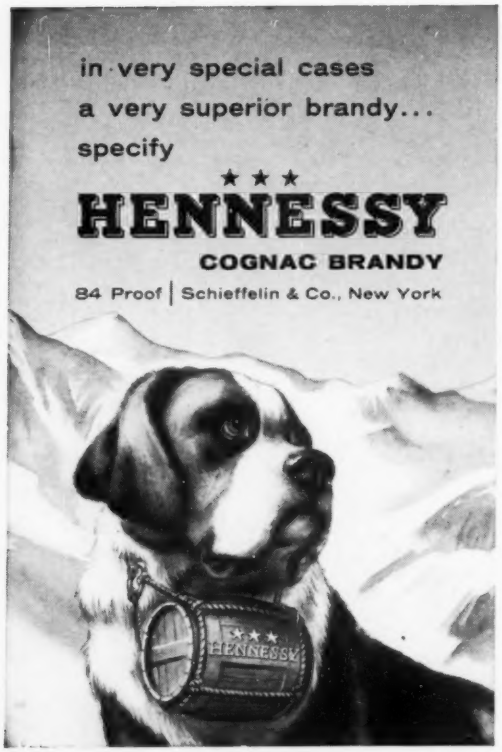
From the standpoint of epidemiology, success with the patient treated by a private physician

equals that of the public clinic patient.

One question with respect to syphilis morbidity is raised sooner or later: Are these increases "real" increases in incidence, or are they only the results of improved casefinding and reporting? As we see it, increased morbidity at this point reflects both increased incidence and improved reporting. But we have no way of knowing how much is attributable to either.

However, there is one answer to this question. Regardless of what morbidity reports represent, the patients are real, they need treatment, and their contacts need examination. This cannot be denied.

In fact, it may be expected that if our present efforts continue successfully, as I have every hope that they will, morbidity figures will go a lot higher than they are now. But, sooner or later, a point will be reached after which any amount of epidemiological effort can result only in a plunge toward eradication.



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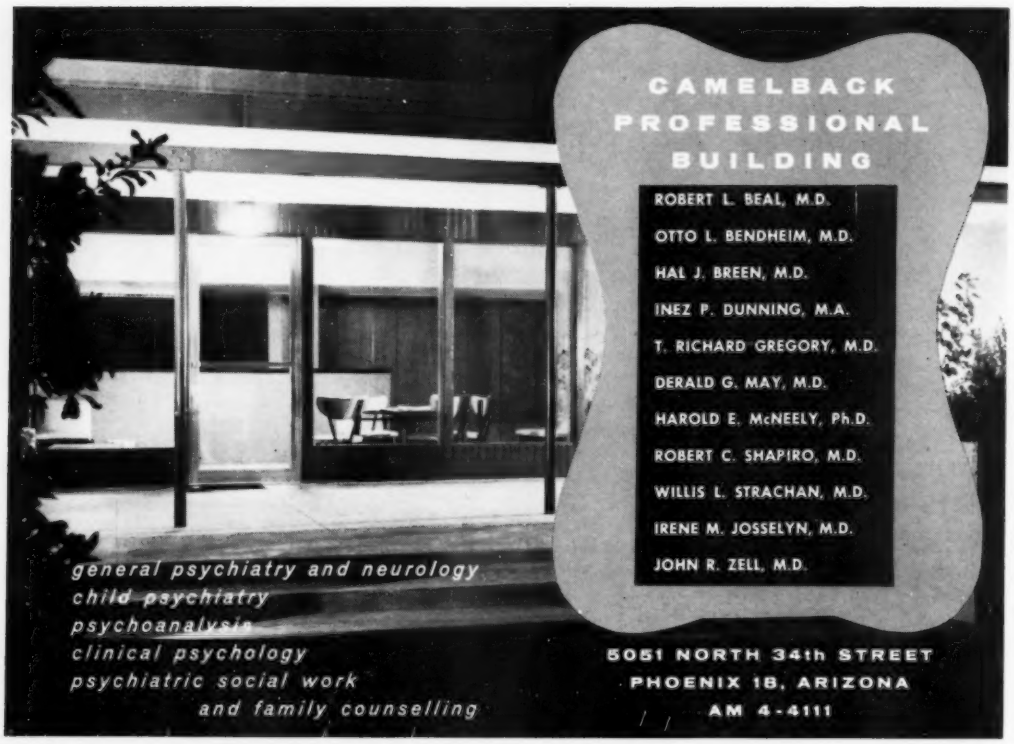

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Further information may be obtained by writing the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago, Ill.

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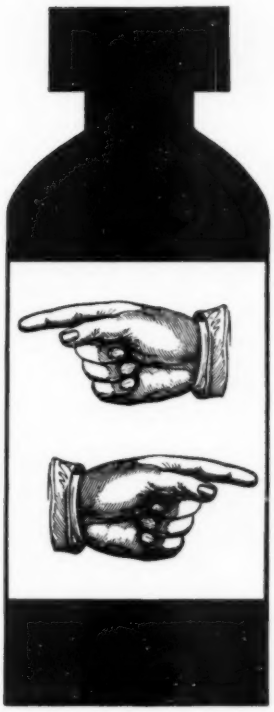

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